NOVEMBER, 1933

COTTON

Serving the

TEXTILE INDUSTRIES

OUR QUALITY

Insures Cost Economy

If ever there was a need for lower production costs, it is today. Today's shorter hours and higher wage scales make it imperative that every hour yield its full quota of first quality goods.

Standard-Coosa-Thatcher Yarns and Threads are known and used for their high quality performance. Their smooth running evenness cuts costs. Talk over this cost-cutting efficiency of our yarns and threads with our representative. He can give you specific instances. Let him arrange a test on your machines for you.

51 years of experience

SPINNERS MERCERIZERS DYERS BLEACHERS

NRA MEMBER U.S.

WE DO OUR PART

STANDARD • COOSA • THATCHER COMPANY

CHATTANOOGA, TENNESSEE

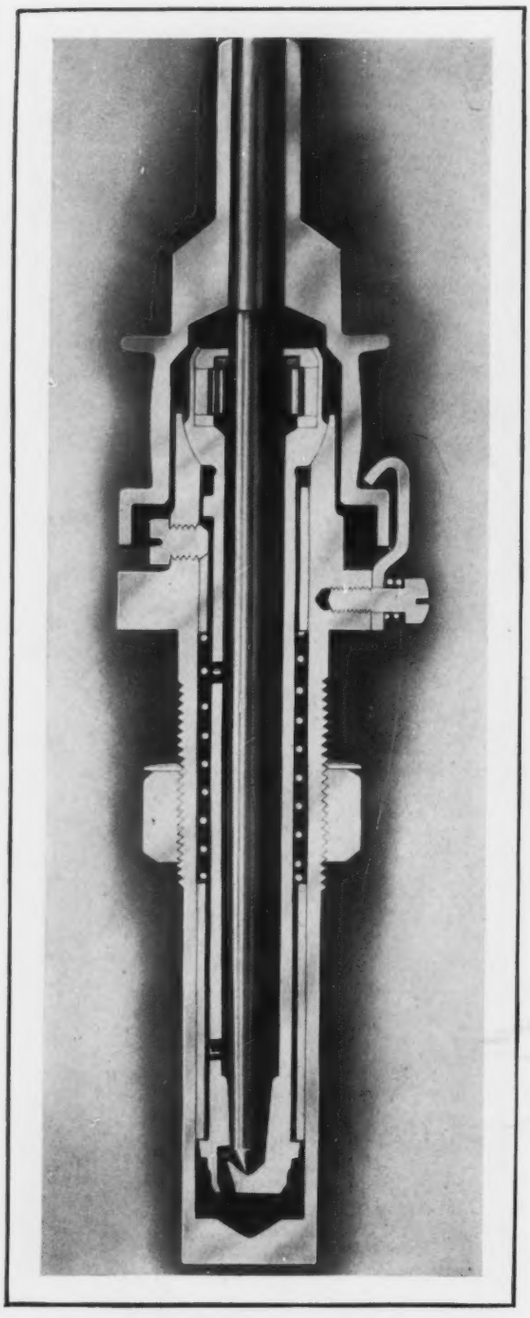
— Branch Offices —

Philadelphia, Pa.: 719 Lafayette Building
Chicago . . . . . 940 Merchandise Mart
New York . . . . . 456 Fourth Avenue
Boston: 211 Albany Building, 179 Lincoln Street
Rochester . . . . . 82 St. Paul Street
Charlotte, N. C. . . . . Johnston Building
St. Louis, Mo.: 310 Leather Trades Building, 1602 Locust Street

Table of Contents, Page 21.

KNITTING SECTION, PAGE 87

Advertisers' Index, Page 122.



● All SKF Spindles are sold through spinning frame manufacturers.

SKF
ROLLER BEARING
SPINDLES

103,886

SKF

SPINDLES

SOLD IN 1933*

*** Up to September 1**

● PERFORMANCE . . . that is the sole basis upon which 103,886 SKF Roller Bearing Spindles have been sold up to September 1st, this year. The record is an open book . . . results alone have justified additional and new installations . . . or mill executives would not have placed orders as shown in the following tabulation:

REPEAT ORDERS

Arista Mills, Winston-Salem, N. C.	1932	10,560	SKF-Whitin Spindles			
Washington Mills, Fries, Va. (*Same Management as Arista*)	1933	31,250	"	"	"	
Spartan Mills, Spartanburg, S. C.	1930	24,636	"	Saco-Lowell	"	
	1933	3,436	"	"	"	"
Greenwood Cotton Greenwood, S. C.	1931	26,425	"	"	"	"
	1933	528	"	"	"	"

NEW INSTALLATIONS

Bemis Cotton Mill, Bemis, Tenn.	1933	21,696	"	"	"	"
Hillside Cotton Mills, La Grange, Ga.	1933	2,160	"	"	"	"
Lancaster Mills, Lancaster, S. C.	1933	28,456	"	"	"	"
Kershaw Cotton Kershaw, S. C. (*Same group as Lancaster*)	1933	8,280	"	"	"	"
Standard Knitting Knoxville, Tenn.	1933	2,320	"	H & B	"	

The balance of SKF Spindles were sold to worsted and silk mills.

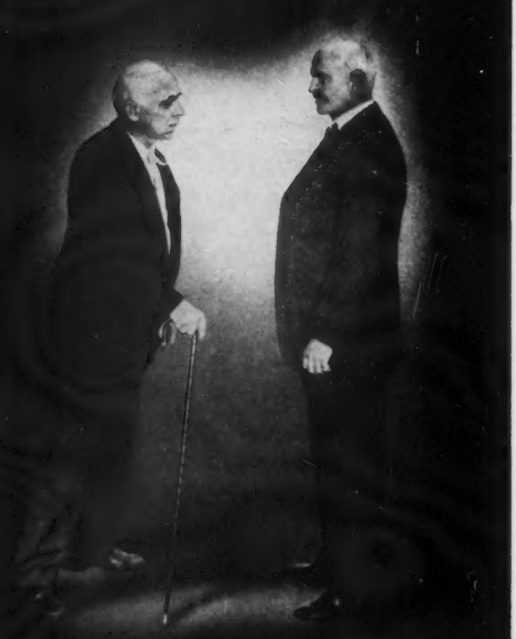
SKF Roller Bearing Spindles were selected by these mills primarily for two reasons. First . . . they make good yarn. Secondly . . . they insure the utmost cleanliness. And, of course, they save power too!

There is hardly a mill today that does not consider specifying SKF Spindles when purchasing new frames. Some of the best yarn is spun on SKF Spindles. It will pay you to investigate . . . NOW . . . the returns possible with SKF Roller Bearing Spindles in your mill . . . whether you are spinning cotton, wool or throwing silk. Ask your spinning frame manufacturer . . . or write us direct. SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y.

3098

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

They Were Boys Together



One Followed
the Old Philosophy

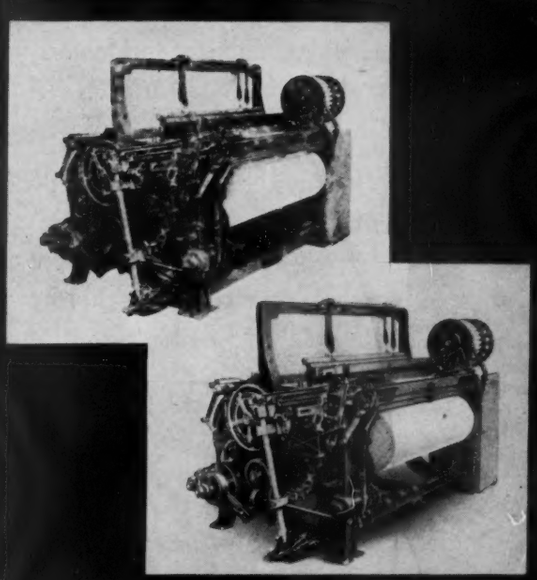
—

To Live Carelessly
and Call the Doctor
When Sick Unto Death

His Chum Followed
the New Philosophy

—

To So Eat and Live
As to Keep Physically Fit
and Banish Old Age



On a Diet of Improper Repair Parts
Your Looms Soon Become Old
and Decrepit and Unprofitable
You Call the Draper Loom Doctor
It is too Late
He Can't Prevent the Inevitable

On a Diet of Draper-Made Parts
Your Looms Will Keep Fit
Prolong their Youth and Vigor
and Continue to Earn Profits

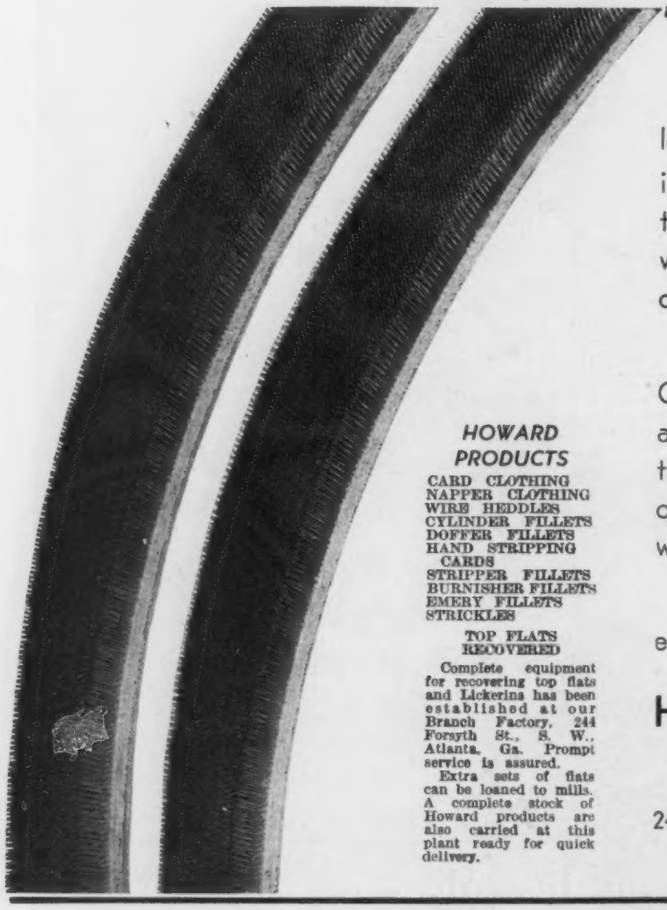
Let Your Looms Live in the Modern Way

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

Putting a New Punch in Your Cards with "TUFFER"!



HOWARD PRODUCTS

CARD CLOTHING
NAPPER CLOTHING
WIRE HEDDLES
CYLINDER FILLETS
DOFFER FILLETS
HAND STRIPPING CARDS
STRIPPER FILLETS
BURNISHER FILLETS
EMERY FILLETS
STRICKLES

TOP FLATS RECOVERED

Complete equipment for recovering top flats and Lickerins has been established at our Branch Factory, 244 Forsyth St., S. W., Atlanta, Ga. Prompt service is assured.

Extra sets of flats can be loaned to mills. A complete stock of Howard products are also carried at this plant ready for quick delivery.

THE short hours we are all working under makes it more necessary than ever to put each machine into the highest efficient condition. First, look to your cards—regardless of the perfect mechanical action of the cylinder and doffer, the card "lacks the punch" if the clothing fails to perform. Old, worn clothing hampers its production and lowers yarn quality.

Give your cards a "new punch" with new TUFFER Card Clothing that bites into the raw stock and does a fast, thorough job of carding. It will give the card the "wallop" necessary to increase production and quality and save considerably on stock heretofore wasted.

Specify TUFFER on your next order from our nearest branch office.

HOWARD BROS. MFG. COMPANY

Home Office and Factory: Worcester, Mass.

Southern Plant
244 Forsyth Street,
Atlanta, Ga.

Branch Offices
Philadelphia, Pa., Dallas,
Texas, and Washington, D. C.

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

CARD CLOTHING

Don't be Sentimental . . .

"You've been a good old machine . . . . . *but!*"

about your old machines. They have done their work. Give them a final pat on the flywheel, and . . . . .

Get rid of them!

INSTALL new, modern finishing machines which will improve the quality of your finish—make goods more saleable—and at the same time improve your yardage while they save labor and power costs.

We'll admit that it takes courage to scrap a machine that is working as efficiently as it ever did.

But—it's out of date, and it's costing you money to keep it. Let us prove this to you. Tell our engineers what machines you are operating, and they will show you quickly why you cannot afford to continue with machinery which places you at a disadvantage so far as your competitors are concerned.

These same competitors had the courage to scrap obsolete machines even though they were running as well as they ever did.

You surely have the same courage.

Remember

In addition to the regular Butterworth Finishing Machinery we also build the complete line of Klauder Weldon Dyeing Machines. This is known as the K.W. line. Constant research and development work has been going on in connection with this line. We shall be glad to have the opportunity of telling you something about up-to-the-minute K. W. machines.

H. W. BUTTERWORTH & SONS CO.
Established 1820
PHILADELPHIA, PA.
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

New England Office: TURKS HEAD BUILDING Providence, R. I.
Southern Office: JOHNSTON BUILDING Charlotte, N. C.
In Canada: W. J. WESTAWAY CO. Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY

ALDRICH SYNCHRONIZED SINGLE PROCESS PICKING

Is The Best System For Changing Old Pickers To Single Process Equipment

Since it has been on the market, it has been applied to more pickers than any other system.

It is inexpensive, simple and compact.

There is nothing about it to adjust, and nothing to get out of order.

It is the only single process system which does not overload the evener, and a sluggish evener makes poor laps.

Aldrich Synchronizers can be attached to any other arrangement of single process picking and will give better results than you are now getting.

The Aldrich System costs so little to install that it pays an average return of over 100% annually on the investment.

Made and installed by

ALDRICH MACHINE WORKS

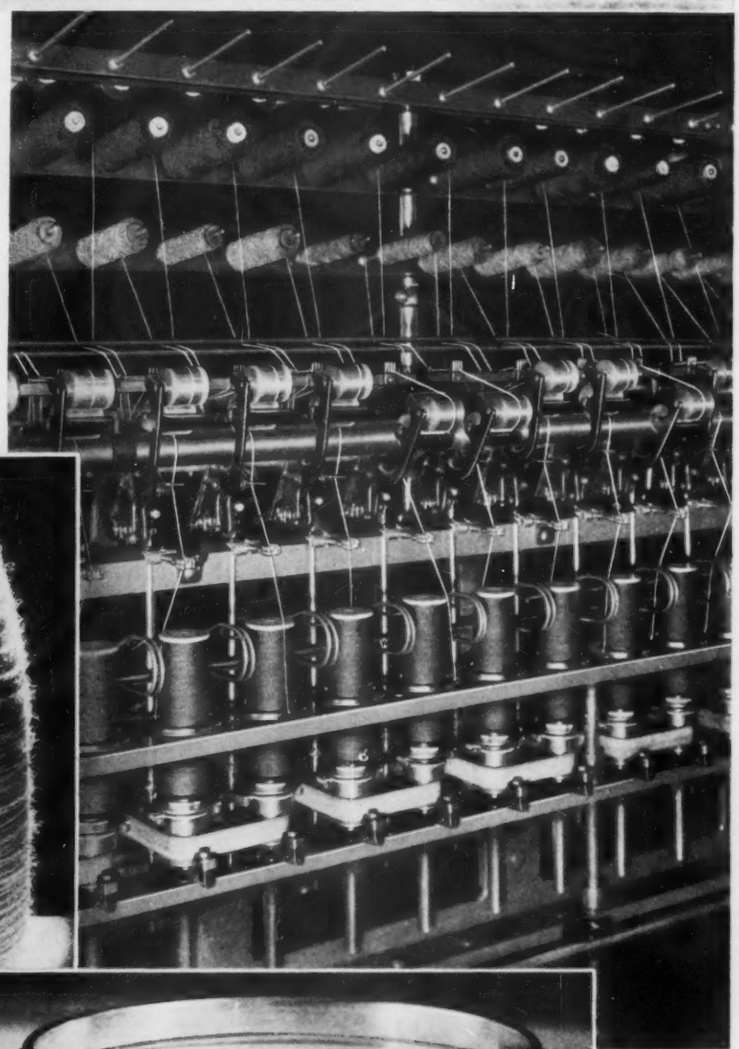
Greenwood, South Carolina

Large Package HIGH SPEED TWISTERS

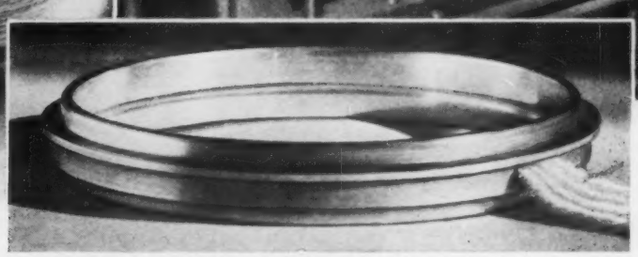
Horizontal Roll Type

For Woolens and Worsteds, Men's Wear and Dress Goods, Mohair Plushes, Carpets and Paper Makers' Felts.

Selective type trap motions for multiple ply yarns. Stop motions for two-ply work.

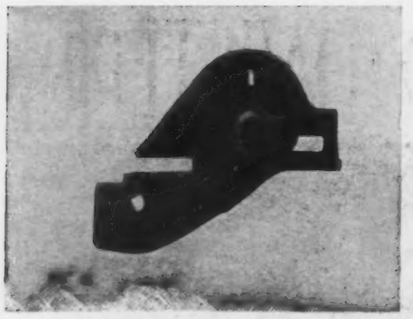


Two to eight times as much yarn on a Twister spool.



LOWER manufacturing costs • Higher machine efficiency • Less doffing • Fewer knots • Elimination of drop-ply yarns. Knots confined to single yarns when selective trap motion is used for multiple plies • With increased package diameter and long traverse, the high spindle speeds customary with smaller packages are retained. CRYS-STEEL auto-lubricated vertical rings • Uniform yarn tension Special type high capacity spring tempered spindles • Rigid, sturdy machine construction.

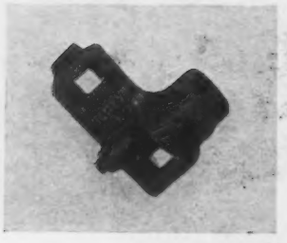
WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.

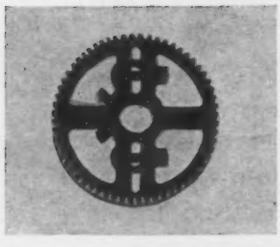


Maintenance Economy—

Under the standard shorter week and higher wages, manufacturing costs and economical purchasing of maintenance supplies become more important than ever before.

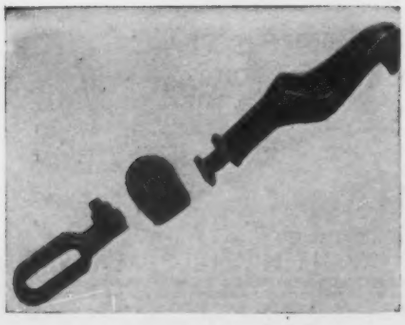
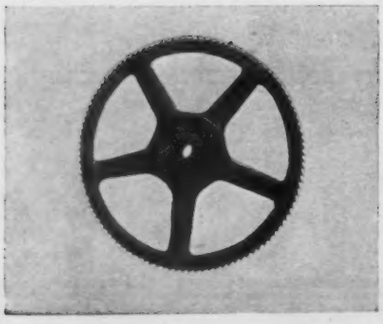
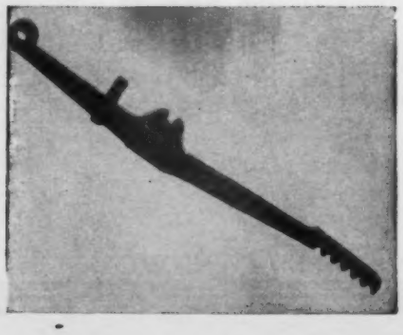
A constantly increasing number of mills are finding HENDERSON Superior Repair Parts give long, trouble-free service. They know that "HENDERSON" means highest quality, precision fit, dependable parts. They know that HENDERSON'S low overhead and Southern location afford substantial savings in their repair costs.

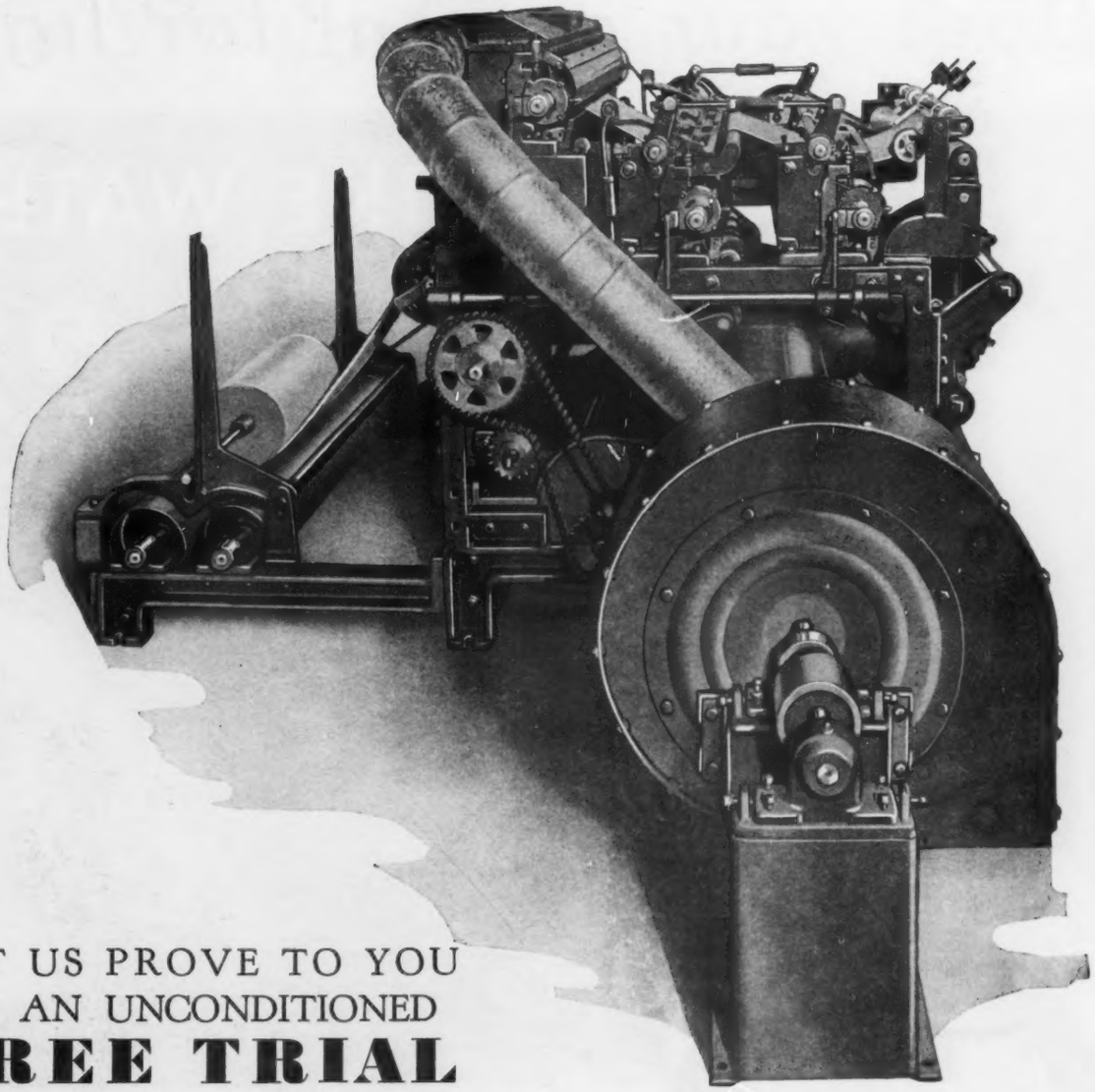




Send your order for needed parts or send samples of parts desired and let us quote you prices.

Henderson Foundry & Machine Works
HAMPTON, GEORGIA



View from left end.

LET US PROVE TO YOU
BY AN UNCONDITIONED
FREE TRIAL
THAT OUR SHEAR COSTS
ALMOST NOTHING TO RUN
SAVES MANY GIRLS AND
IMPROVES YOUR CLOTH

AUTOMATIC COTTON SHEAR

A DEPENDABLE SELF RUNNING MACHINE THAT
ABSOLUTELY CLEANS YOUR CLOTH FROM
ALL HANGING THREADS

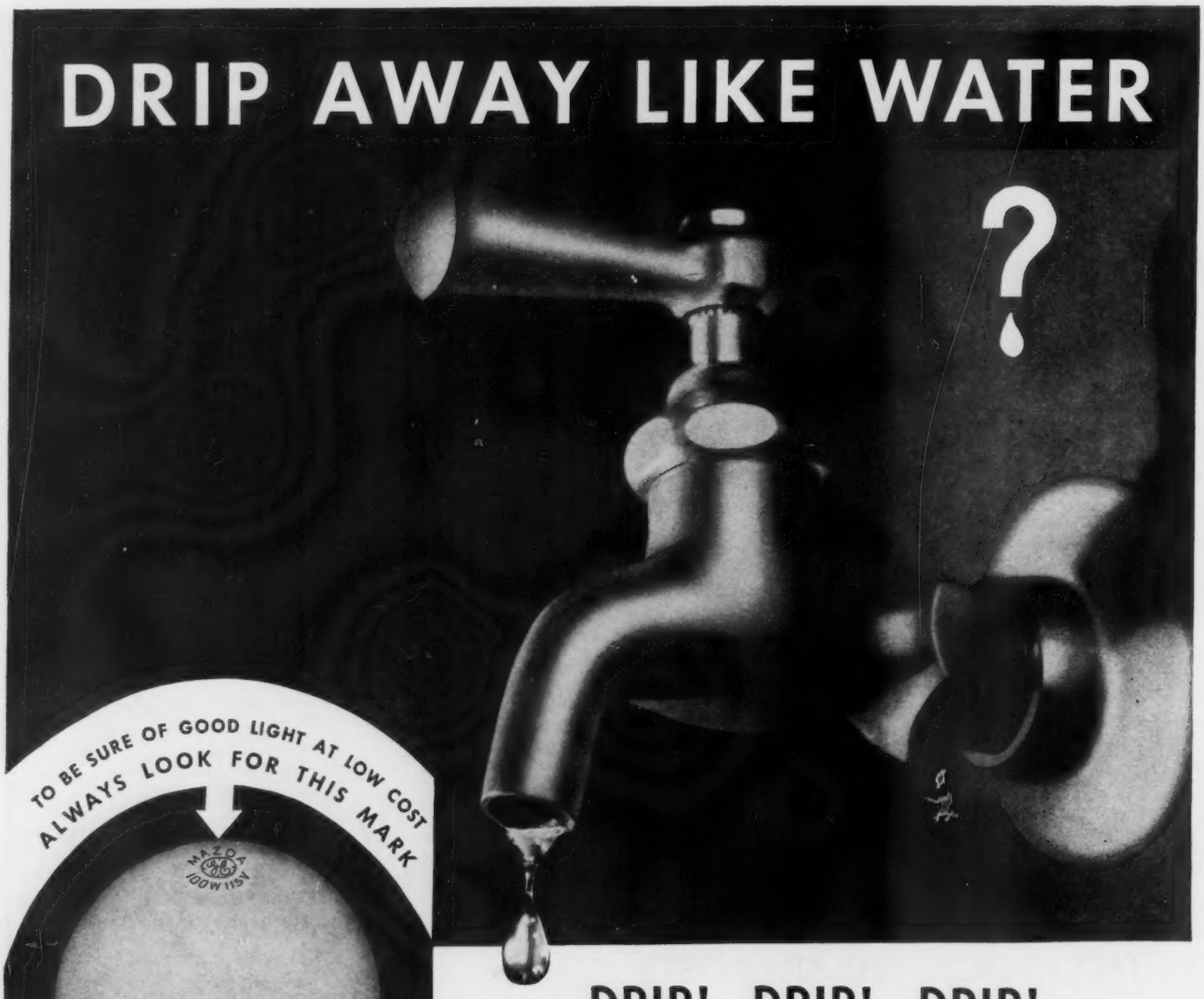
THE SEAMSTITCHER SERVES IT

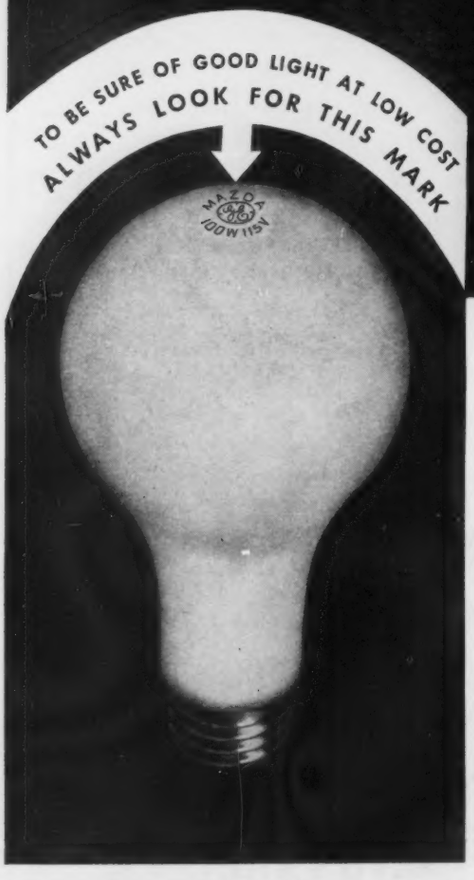
P. B. RAIFORD, Jr., CONCORD, NORTH CAROLINA

PARKS & WOOLSON MACHINE CO.

Springfield, Vermont

Does your current for light





GENERAL ELECTRIC MAKES LAMPS
FOR EVERY LIGHTING PURPOSE

DRIP! DRIP! DRIP!

● When you hear that sound you know that your money's dripping away with every drop. And you stop it at once.

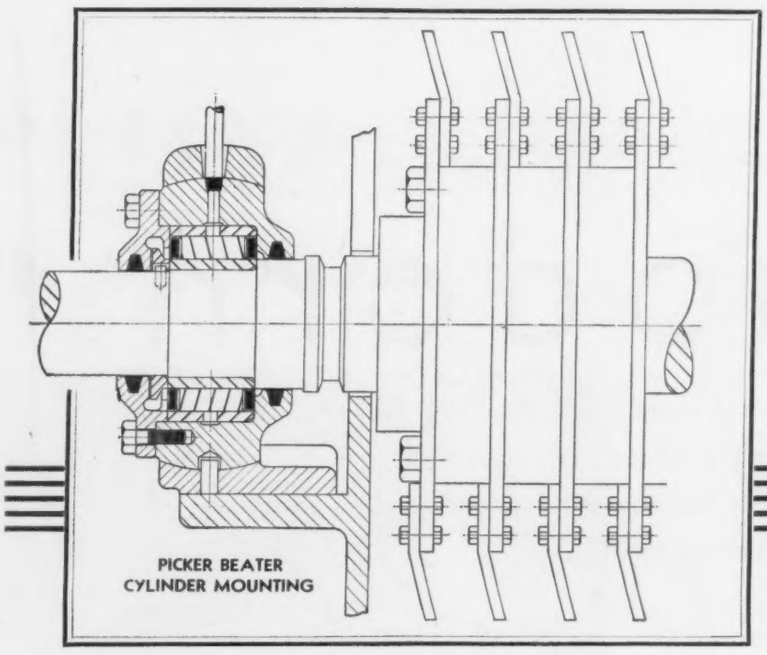
But do you know that light drips away from an inferior incandescent lamp like water from a leaky faucet? Why? Because an inferior lamp does not convert all the electricity it uses into light. It fails to make the most of a wonderful, inexpensive servant—electrical current.

There is one sure way to stop this waste.

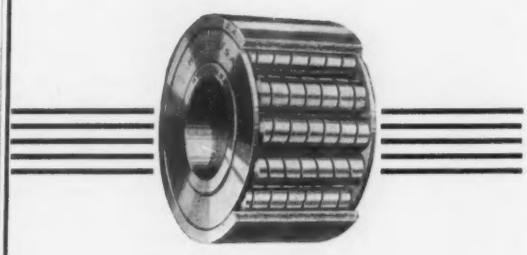
See that the G-E monogram is on the end of every incandescent lamp you buy. That means that the lamp has been subjected to 480 rigid processes, inspections and tests to make sure that you get all the light you pay for. General Electric Company, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC
MAZDA LAMPS

You Wouldn't Think of Buying



Opening and Picking Equipment Without These Superior Anti-Friction Bearings



Years of experience have proved their worth on cylinders, beaters, fans, lap racks and drives, so that today these better bearings are practically standard equipment. Every mill operator knows they stand up under continuous mill operation and cut maintenance cost. As a result every modern picker uses anti-friction bearings.

Then Why Omit Them From Your Looms at Principal Wear Points

Over 100,000 Hyatt Roller Bearings are successfully operating in looms, demonstrating daily that they make looms run better. It is a known fact that Hyatt Roller Bearings in looms save power, save supplies, save fixing, save lubrication, increase yardage, and stop oil-spotting. Weavers like to run Hyatt-equipped looms because they turn over so easily by hand and turn out expected production. Hyatt Roller Bearing Company, P. O. Box 476, Newark, N. J.

H Y A T T

ROLLER BEARINGS

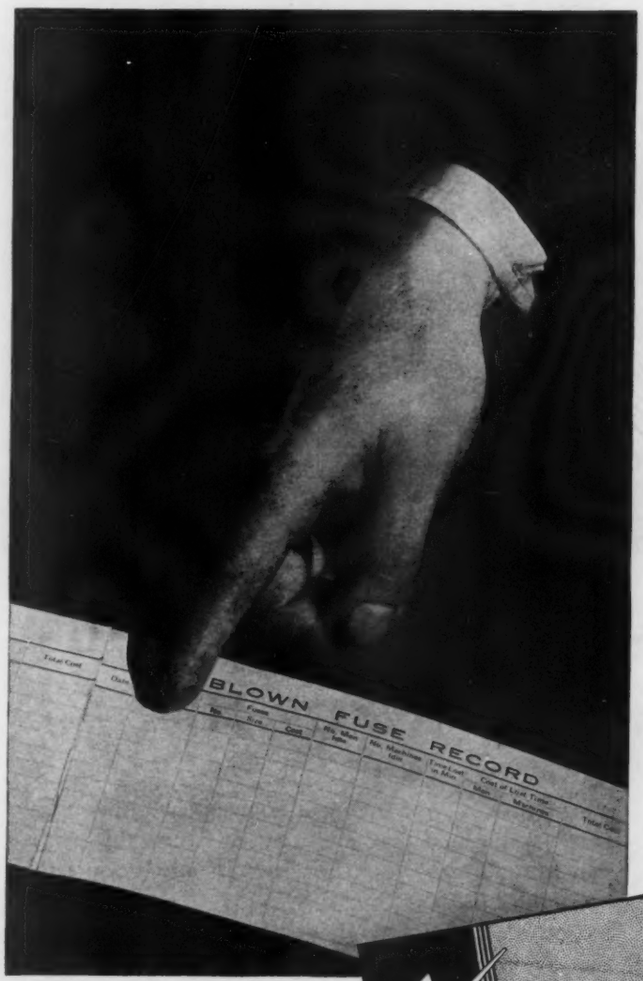
PRODUCT OF GENERAL MOTORS

keep your brand designs
modern
Textile merchandising moves ever forward in company with an age of change. New styles, new patterns, new products rise above the skyline, seeking their share of consumer recognition.
That recognition is more easily obtained when goods are branded with designs which properly reflect both the character of the product and the modern spirit.
In our work of originating designs for textile brands, we strive to keep these salient features uppermost in mind. Our products include labels, tickets, bands, hang tags, bolt ends and hosiery riders on which we invite inquiries.
JACOBS
GRAPHIC ARTS
COMPANY
CLINTON, SO. CAR.

Check THE COST

OF OBSOLETE CIRCUIT PROTECTION

IN YOUR MILL



This check book makes it easy to keep an accurate record of lost time and money caused by blown fuses in your mill.

ACTUAL investigations have proved that the total cost of the replacement of blown fuses and the resulting time wasted by idle operatives and machinery, cuts into the profits of the average mill to the extent of thousands of dollars annually.

This cost represents unnecessary waste!

The Westinghouse Nofuze Circuit Breaker eliminates fuses in the protection of mill lighting and power circuits.

With this breaker, anyone can restore power instantly and safely after a short circuit or heavy overload has interrupted service. There is nothing to replace or renew. Practically no time is lost.

End Fuse Waste!

There is only one method to *accurately* determine your present circuit-protection cost. Keep a record of every blown fuse and evaluate the lost time of men and machines. You will be amazed at what fuse protection costs you yearly.

Send for free copies of the Fuse Check Book which makes it easy to keep such a record. Check this leak in profits for yourself! You'll find that an investment in fuseless circuit protection pays immediate dividends.

Just mail the coupon today for a free copy.

The Westinghouse Nofuze Breaker which eliminates fuses in the protection of mill wiring circuits. Available up to 600 amperes, 600 volts a-c., and 250 volts d-c.

SEND FOR CHECK BOOKS

Westinghouse Electric & Manufacturing Company
Room 2-N—East Pittsburgh, Pa.

Gentlemen: I would like to investigate my fuse costs. Please send the Fuse Check Book and a copy of the booklet on low-cost circuit protection.

Name .....

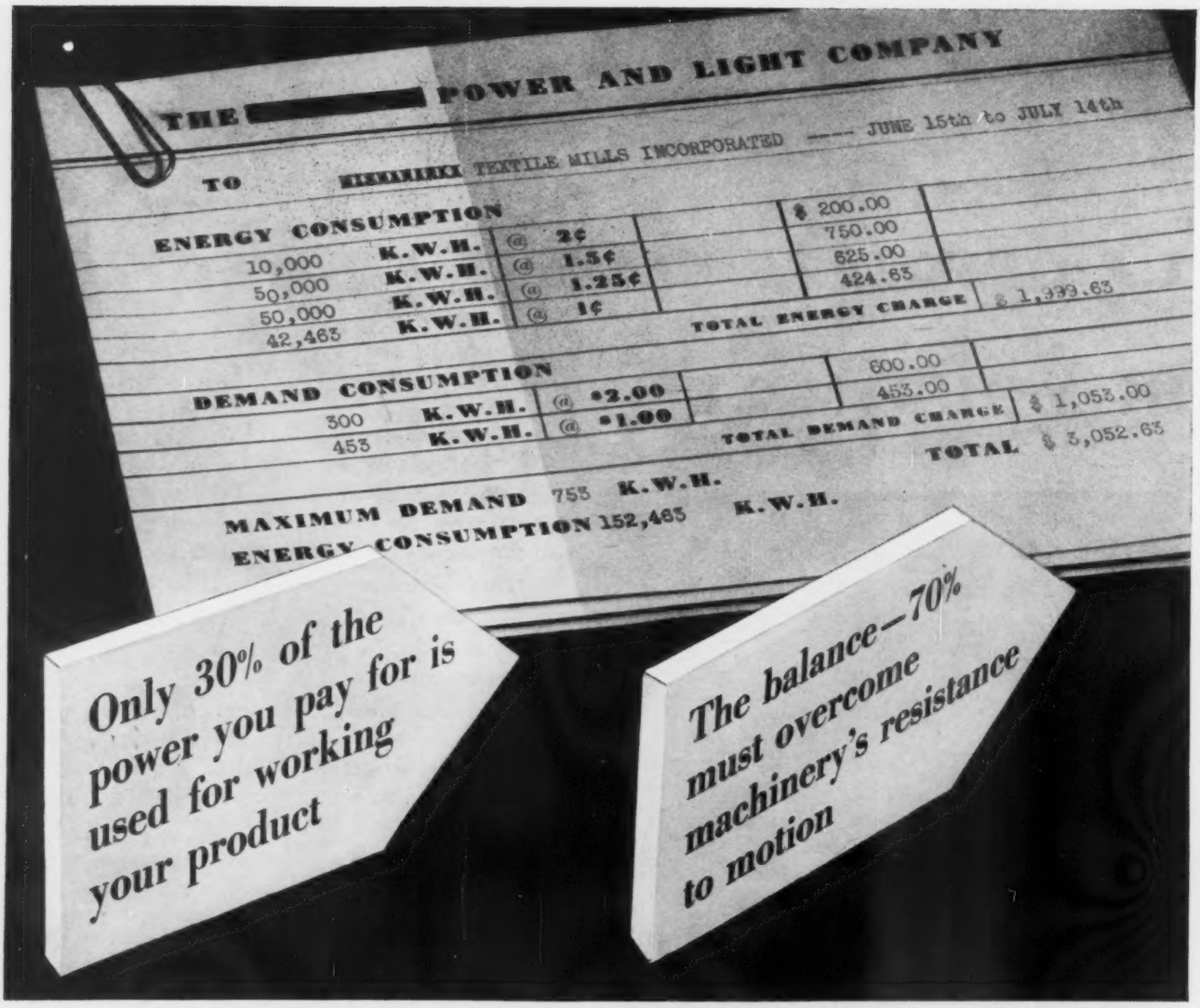
Company .....

Position ..... T 79797-B

Address ..... C 11-33

Westinghouse

Quality workmanship guarantees every Westinghouse product


THE [redacted] POWER AND LIGHT COMPANY
TO [redacted] TEXTILE MILLS INCORPORATED ---- JUNE 15th to JULY 14th
ENERGY CONSUMPTION
10,000 K.W.H. @ 2¢ $ 200.00
50,000 K.W.H. @ 1.5¢ 750.00
50,000 K.W.H. @ 1.25¢ 625.00
42,463 K.W.H. @ 1¢ 424.63
TOTAL ENERGY CHARGE $ 1,999.63
DEMAND CONSUMPTION
300 K.W.H. @ $2.00 600.00
453 K.W.H. @ $1.00 453.00
TOTAL DEMAND CHARGE $ 1,053.00
TOTAL $ 3,052.63
MAXIMUM DEMAND 753 K.W.H.
ENERGY CONSUMPTION 152,463 K.W.H.
Only 30% of the power you pay for is used for working your product
The balance—70% must overcome machinery's resistance to motion

Gargoyle Lubricants help leading mills reduce this resistance 5% to 10%

Let us consider a textile mill with an average monthly power bill of $5000. With ordinary lubricants in use, it is likely that in this mill $1500 buys enough power to work the product. The balance—$3500—*goes for power used to overcome machinery's inherent resistance to motion.*

Records of leading textile mills of every type show that Gargoyle Vactra X Oils and Gargoyle Velocite Oils, by providing proper film strength, reduce this frictional resistance as much as 10%.

Suppose that by the use and correct application of Gargoyle Lubricants in your mill you could cut your frictional power consumption, say, only 3%. Even at that conservative figure, the savings you would make *would more than pay your entire annual oil bill.*

Doesn't it seem well worth your while to let a Socony-Vacuum representative show you results of power tests made in equipment similar to your own—to suggest ways by which Gargoyle Lubricants can reduce power consumption in your mill?

Socony-Vacuum Corporation, 26 Broadway, New York City. Branches and distributors in principal cities throughout the world.

GARGOYLE
Lubricating Oils

NRA WE DO OUR PART

SOCONY-VACUUM
CORPORATION

Multiple V-Belt Drive Announcement

ALLIS-CHALMERS Manufacturing Company, of Milwaukee, Wisconsin, announces that licenses under United States Letters Patent No. 1,662,511 relating to power transmitting mechanism, commonly known as Multiple V-Belt Drive, have been granted to the following belt and sheave manufacturers:

The American Pulley Company - - - - - - Philadelphia, Pa.
The Dayton Rubber Manufacturing Company - - - Dayton, O.
R. & J. Dick Co., Inc. - - - - - - - - - - Passaic, N. J.
Dodge Manufacturing Corporation - - - - - Mishawaka, Ind.
L. H. Gilmer Company - - - - - - Tacony, Philadelphia, Pa.
Goldens' Foundry & Machine Company - - - - Columbus, Ga.
The B. F. Goodrich Rubber Company - - - - - Akron, O.
The Goodyear Tire & Rubber Company, Inc. - - - Akron, O.
W. A. Jones Foundry & Machine Company - - Chicago, Ill.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc. - - - - - - Passaic, N. J.
The Medart Company - - - - - - - - - St. Louis, Mo.
The Ohio Valley Pulley Works - - - - - - - Maysville, Ky.
Pyott Foundry & Machine Company - - - - - Chicago, Ill.
Rockwood Manufacturing Company - - - Indianapolis, Ind.
T. B. Wood's Sons Company - - - - - - Chambersburg, Pa.
Worthington Pump and Machinery Corporation - Harrison, N. J.

Allis-Chalmers Manufacturing Company

Milwaukee, Wisconsin

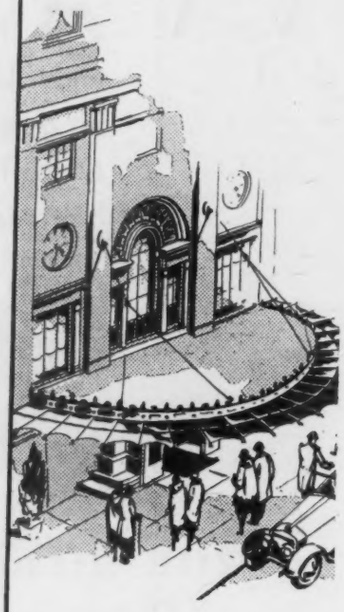
The VANDERBILT Hotel

New York City

An hotel of Distinction
with very Low Rates

Single Room & private bath $3.00

Double Room with two beds & private bath $6.00

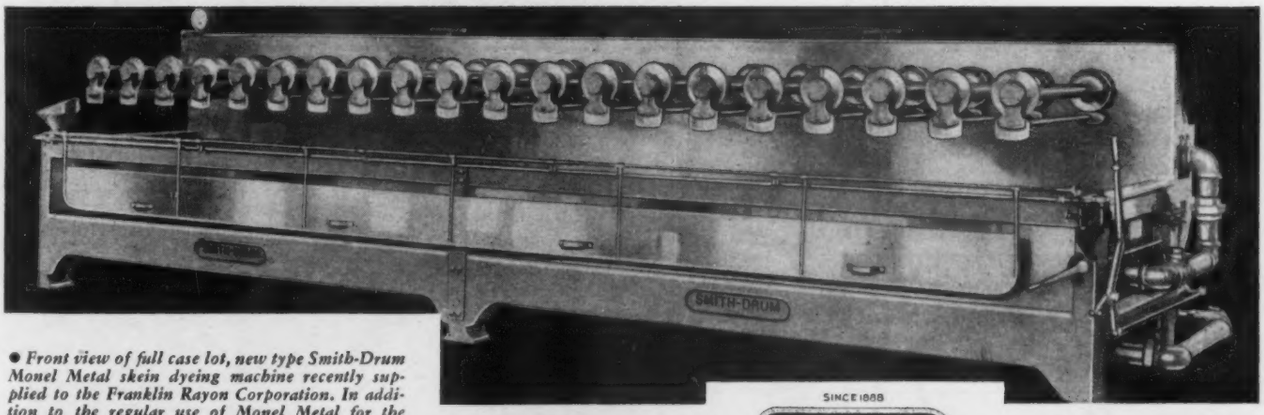


WALTON H. MARSHALL, Manager
Park Avenue at 34th St., New York

The Della Robbia Room

One of America's Largest Rayon Dyers orders its

8TH MONEL METAL SMITH-DRUM MACHINE



● Front view of full case lot, new type Smith-Drum Monel Metal skein dyeing machine recently supplied to the Franklin Rayon Corporation. In addition to the regular use of Monel Metal for the tank, splash-back, guard, yarn tubes and yarn rotating members, all of the piping is also of Monel Metal, instead of brass, and all cast parts coming in contact with the dye liquor are made of a high Nickel alloy instead of bronze.

• • •

● Installation showing four of the five new type Smith-Drum Monel Metal machines (totalling 41 tubes) installed in the Providence, R. I., plant of the Franklin Rayon Corporation. Monel Metal is used in all the sheet metal parts of these machines: tank, splash-back and guard, also for the yarn tubes and yarn rotating members.

The Franklin Rayon Co., Providence, R. I., saves money by spending a total of $80,000.00!

● When The Franklin Rayon Company appropriated the money for their three newest Smith-Drum skein dyeing machines they were not expanding for an increased volume of business. Their aim was simply to reduce cost and get more profit from the orders already in hand...and they *knew* that more Smith-Drum machines would do it.

They knew because the five similar machines, representing a total investment of $30,000, originally installed in their plant, had produced revolutionary results in lowering costs and improving quality. The three new Smith-Drum machines, built with Monel Metal, cut dyeing costs 20 to 30%. They reduce winding costs 40 to 50% on finer denier yarns.

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Improved quality usually means *higher* costs...but not so with Monel Metal equipment. In fact these improvements *save* money! To begin with, less dyestuff is needed than with equipment made of absorbent materials, for Monel Metal is absolutely non-absorbent. (With the Smith-Drum machine, though the yarn is totally submerged, the liquor proportion can be carried as low as 12 to 1.)

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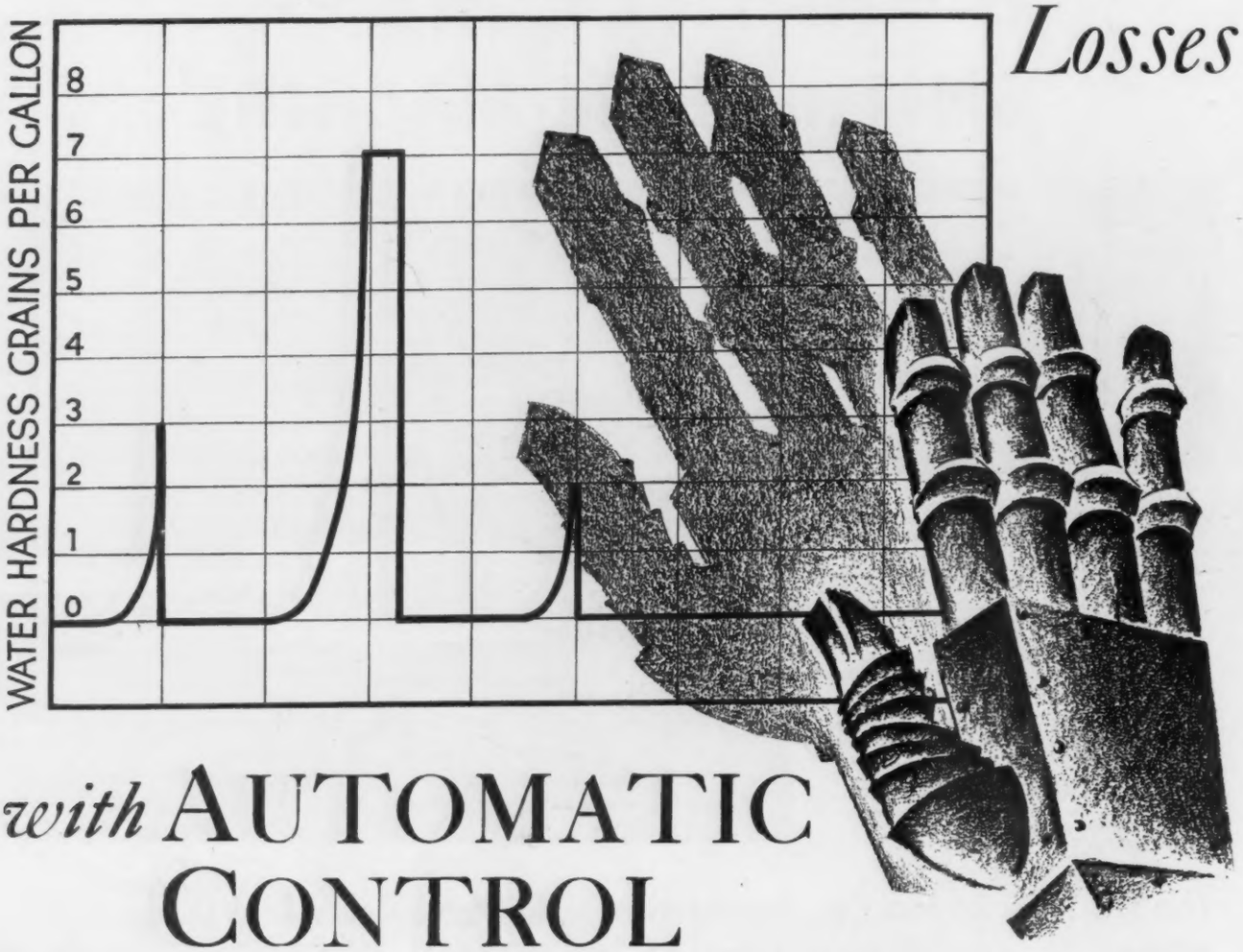

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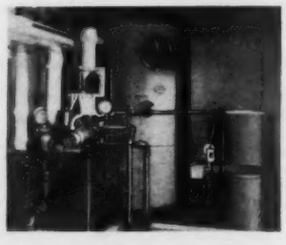

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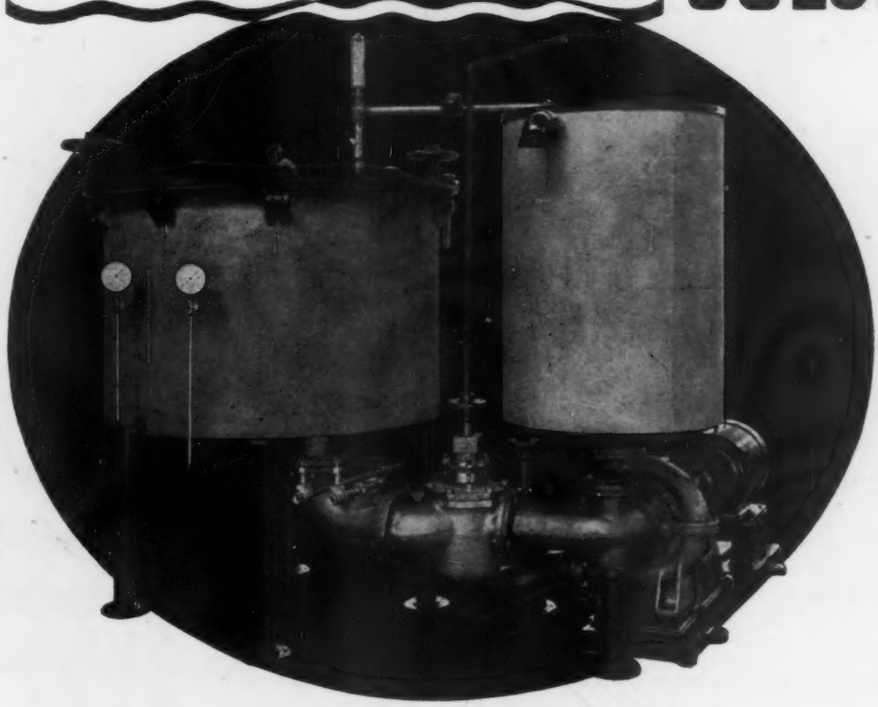

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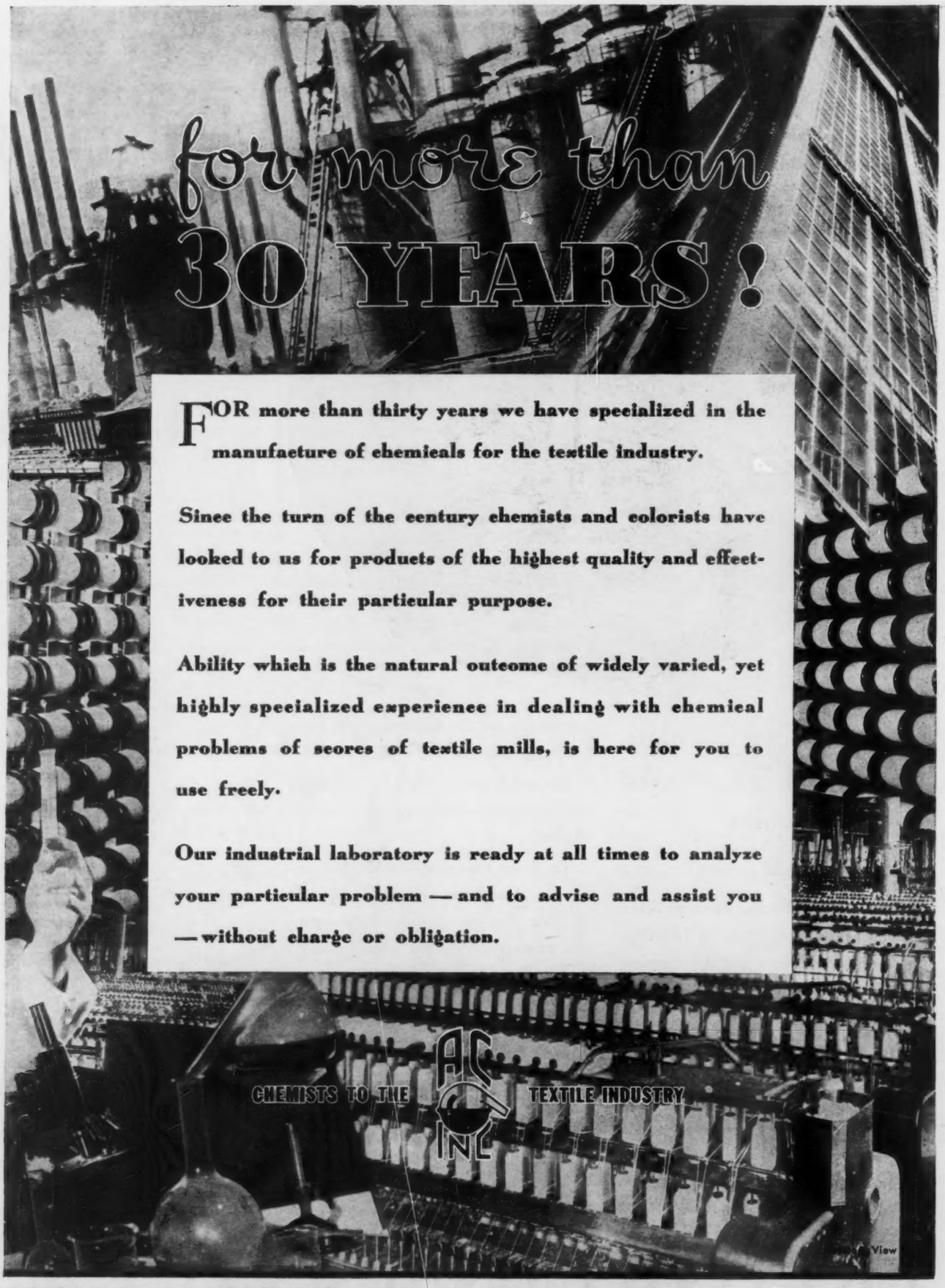
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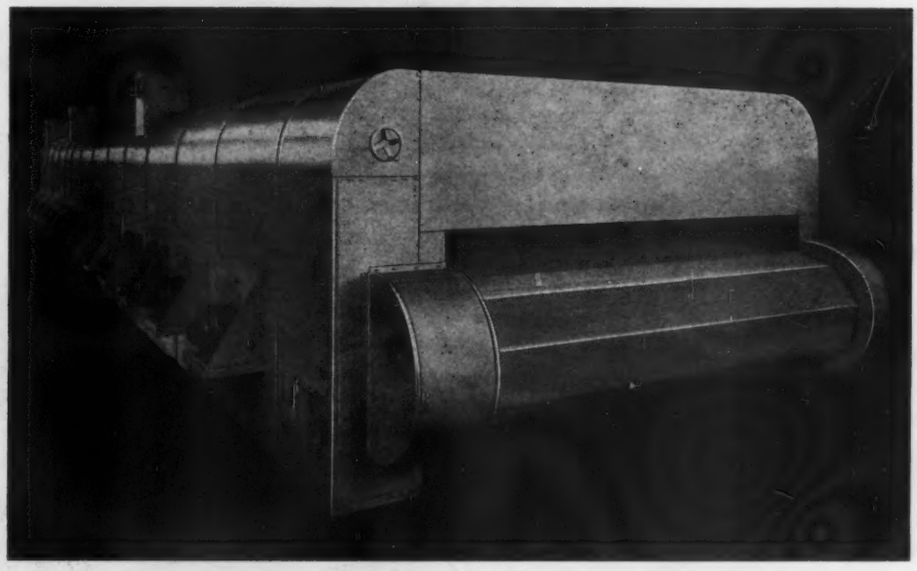

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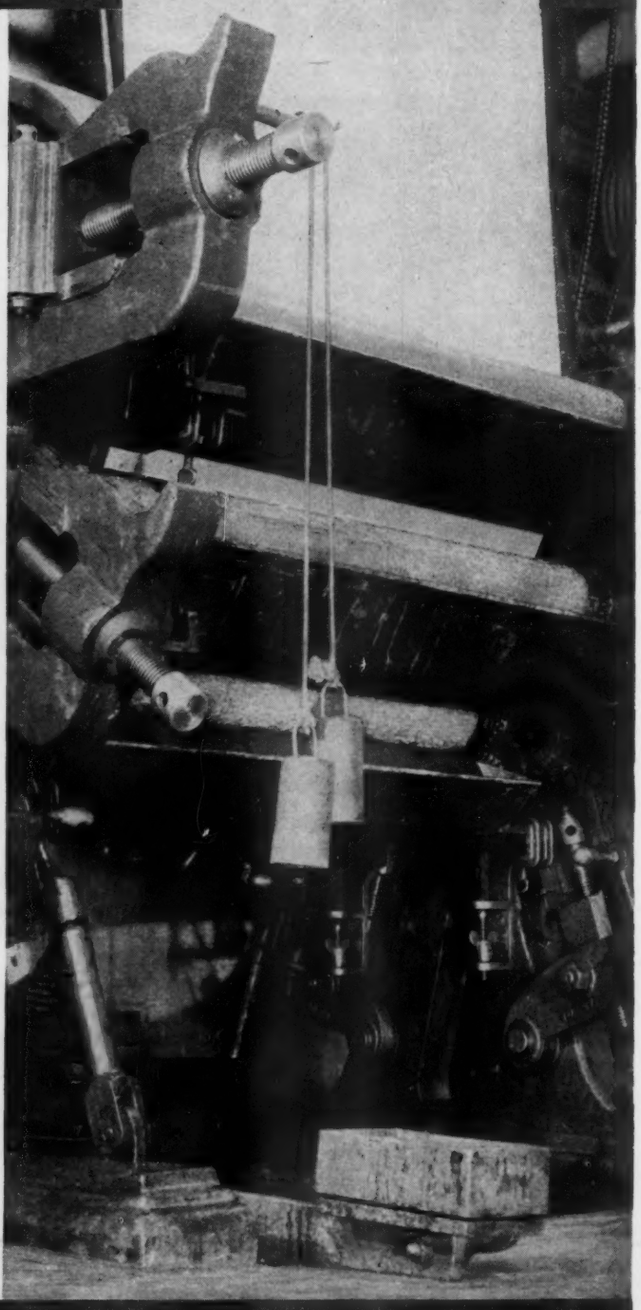

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Vol. 97 **COTTON** No. 11

November, 1933

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Contents

General and Technical—

Status of Cotton Textile Industry Reported at Institute Meeting ---- 23
The Export and Import Situation for Textiles, by Harry L. Bailey ---- 25
Present Day Relationship Between Cotton-Textile Costs and Prices, by Ralph E. Loper ---- 26
Will Labor Meet Its Responsibility in the Program of Recovery? ---- 28
An Example of Mill Profit Trends Under the NRA and AAA, by E. G. Field 30
The Practical Application of Starches, Gums and Dextrines in Finishing Cotton Piece Goods, by J. Andrew Clark ---- 31
Cotton Opening, Oil Spraying and Other Subjects Discussed at Gastonia--- 34
Gossett Explains Provisions of Registration of Productive Machinery, by B. B. Gossett ---- 37
Hearing on Compensatory Processing Taxes ---- 38
Practical Points on Weaving Rayon Goods, by Phil A. Ment ---- 39
Details of Code for Textile Machinery Manufacturers ---- 42
Carding and Spinning Maintenance Discussed at Durham ---- 43

Current Textile Topics—

Talk of the Month ---- 48
The General Situation in Textile Markets ---- 48
New England Mill Situation ---- 48
National Association Opposes Change in Machine Hours ---- 50
Comment on the Cotton Market ---- 52
New Textile Equipment and Publications-- 56
What the Southern Mills Are Doing ---- 54
Timely News Items With a Textile Slant--- 54
Personal Notes About Men You Know ---- 58
An Old-Timer Says ---- 61
The Scavenger Roll ---- 65

How Other Men Manage—

"Wash's" Rebuttal to "A. T. G's" August Letter ---- 67
"A. T. G." Answers "Wash's" July Questions 71
Comments on "Wash's" Fly Frame Question —and Asks Him One ---- 73
How About Cleaning Ring Rails?---- 74
System Versus Red Tape ---- 74
Some Card Room Topics ---- 75
A Slant on Human Relations ---- 77
Comments on Flat and Other Card Settings 81
"Weavers in the Back Alleys" ---- 83

Knitting Section—

Wants Discussion on Underwear Knitting-- 85
Left-Hand Versus Right-Hand Looping ---- 89
More Figures on Full-Fashioned Seamers-- 89
Preventing Breakouts on Full-Fashioned, Etc. ---- 91
A Discussion of the Parts of Scott & Williams Knitting Machines (Plates 18 and 22) ---- 93
Wants to Know About Treating Looper Points ---- 100
Methods of Handling Full-Fashioned Press-Offs ---- 100
Preventing Accumulation of Odds in Finishing Department ---- 101
The Knit Goods Markets ---- 102
Review of the Yarn Market ---- 108

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Vol. 97
No. 11

COTTON

November,
1933

Status of Cotton-Textile Industry Reported at Institute Meeting

THE eighth annual meeting of the Cotton-Textile Institute at the Biltmore Hotel, in New York City, on October 18, coming just three months after the cotton-textile code was placed in operation of July 17th by approval of President Roosevelt, provided an opportunity for a comprehensive review of conditions in the industry under the code, and a look into the future and its plans. This opportunity was utilized fully in several very able discussions of pertinent topics, which are reported in part here. First, there was the address of George A. Sloan, president of the Institute, on "Present and Prospective Developments under the Cotton-Textile Code", in which Mr. Sloan reviewed the history of the industry's code, and reported on the progress made under its provisions. Harry L. Bailey, head of Wellington, Sears & Co., and a member of the Cotton Textile Industry Committee, discussed "The Export and Import Situation for Cotton Textiles under the Code", and explained the critical situation that has developed from the standpoint of foreign trade. Ralph E. Loper, industrial engineer, discussed "Present Day Relationships between Cotton Textile Costs and Prices", and cited some valuable information on this subject. B. B. Gossett, of Charlotte, chairman of the sub-committee on plant extension, explained the important requirement for the registration of existing productive machinery, etc., and clarified the industry's position on the important matter of the installation of additional productive machinery for cotton manufacturing.

Complete report of all of these excellent discussions here is impractical, but generous abstracts will be made which, it is felt, will give a broad picture of the present and future situation.

Present and Prospective Developments Under the Cotton Textile Code

By George A. Sloan

Mr. Sloan traced the interesting history of the cotton-textile code, as the first to be submitted to the NRA, the first to receive a hearing, and the first to be approved by the President. In discussing the application of its provisions, he said in part:

The cotton-textile code has been in effect three months. Under its statistical provisions the Cotton-Textile Institute is now receiving reports of production, stocks and unfilled orders with respect to broad divisions and staple constructions of cotton textiles from many hundreds of mills and reports as to wages and working hours. What broad pictures do these reports now present? First, as to stocks: They show that in the middle of September, stocks on a comparable basis with a year ago, amounted to approximately the same quantity as a year ago, namely 240,000,000 yards, as against 240,405,000 yards on September 30, 1932. It is well to point out at this time that stocks just prior to the adoption of the Code on July 17th had been materially reduced, amounting approximately to 180,000,000 yards. In some groups, such as fine goods, wide and narrow sheetings, carded and combed yarns, denims and other colored goods, the stocks were down to the lowest point recorded in the 5½-year period for which comparable statistics are available. From such print cloth reports as were available, it was apparent that print cloth stocks were also reduced during the midsummer to the vanishing point.

George A. Sloan

Stocks of Goods

This stock reduction is mentioned because it has been frequently stated that cotton mills deliberately accumulated a large volume of stocks in order to be well supplied when the reduced working hours and higher minimum wages went into effect. Any such statement or inference is highly inaccurate and unfair. As a matter of fact, the industry's stock position reached the lowest point upon record by the middle of July. This was a natural development because customers were purchasing cotton goods out of available stocks before anticipated advances in prices necessitated by the higher costs under the code.

Unfilled Orders

Second, as to unfilled orders: The volume of seasonal buying of cotton goods last year was very heavy and on September 30, 1932, unfilled orders amounted to 570,000,000 yards. On September 16, 1933, the latest date for which aggregate figures are available, the same mills had unfilled orders amounting to 425,000,000 yards. On the whole production has been fairly well balanced with demand. It is true that the aggregate stock position is somewhat higher today than on July 17th, but we must remember that they had reached a point of contrac-

tion which we could not reasonably expect to be continued.

Hours and Wages

Turning from production and stocks, let us now examine what the reports show as to the hourly wages paid to various occupational groups in mills. The filing of this information is mandatory on every cotton mill and each report is carefully examined by our statistical staff. If there is the slightest indication that lower than the minimum wage is being paid any worker entitled to the minimum or that he is working longer hours than the maximum, the matter is taken up immediately with the mill.

At the outset there were some misunderstandings which had to be explained by correspondence or by our field representatives, but I am happy to report that any indication in these wage and hour reports of deviations from the Code have practically disappeared. This is due in large measure to the fact that the Institute's field force is constantly on the move in interpreting the various provisions of the Code.

You will recall that the Code provides that the amount of differences existing prior to July 17, 1933, between the wage rates paid various classes of employees receiving more than the established minimum wage shall not be decreased. The importance of this section of the Code has been pointed out by NRA officials. Where the hourly wage was previously above the minimum, this provision is a guarantee that the minimum wage shall not become the maximum wage.

While there are no available records of wages paid for different classifications of workers immediately preceding the effective date of the Code, the wage data published for the year 1932 by the Department of Labor in Washington, compared with the wage reports now being compiled by the Institute, make it reasonably certain that the wages received by those who had been receiving more than the minimum, and the differentials, as well, have been adequately preserved. For instance, slasher tenders in 1932 earned 1½c per hour more than weavers. Over one thousand mill reports filed with the Institute showed that slasher tenders in August, 1933, earned on the average 2.2 cents per hour more than the weavers. Card grinders in 1932 earned 2.5c more than weavers; in August, 1933, 3c more. Warping and dyeing machine tenders in 1932 earned 2.5c more than weavers and in August, 1933, 4.5 cents more. Loom fixers in 1932 earned 9c more than weavers, and in August, 1933, 12c more. The average for seven occupational groups in 1932 that earned, according to Government reports, more than the minimum wage now prescribed in the Code, including those above mentioned, was 34.9c per hour. In August, 1933, the average for the same group was 43.9c per hour, or an increase in the hourly rate of 25 per cent. Furthermore, the August, 1933, rate for this group was about 40 per cent in excess of the Code minimum. Bear in mind that these averages include all kinds and classifications of cotton mills, including those making the plainest, coarsest and cheapest types of fabrics where the degree of skill is naturally less than in mills making the finer fabrics. Weaving of a coarse bagging is one thing; weaving of fine lawn or organdy for evening gowns is a very different thing.

A complete misconception of the effect of the minimum wage provisions of the cotton-textile code has been broadcast to the country. An utterly false impression has been widely conveyed that minimum wages in the cotton industry are the prevailing rates of wages for all grades of employment. It has been falsely asserted that the minimum wage has become the wage maximum.

The facts which I have just given you, drawn from the actual payroll figures, completely demonstrate how contrary to the fact are any such conceptions. They result from a failure to recognize the function which the minimum wage scale plays in a code. Not only would the whole tradition of the industry as to different occupational rates of pay absolutely have prevented the minimums from becoming maximums, but the provisions of the code itself expressly prevent it by preserving the pre-code differences in wage rates for the occupational groups receiving above the minimum.

Further, the code expressly provides that though the maximum hours of work are required to be greatly shortened over those previously prevailing, the new hourly rates must enable an employee to receive at least as much for a full work week for the shorter hours as he received for the previous longer hours.

These provisions have been lost sight of in discussions of the code. They are not lost sight of in its administration. They have been faithfully lived up to by the industry. Though this is the first code, I venture to say that in no codes which have followed it have provisions for preventing the minimum wage from becoming the maximum wage and for preventing the lowering of the weekly earnings been more protective in terms or more effective in operation in accomplishing this purpose.

Effect of Code on Employment

Now as to the effect of the Code upon employment. Have we done our part in reabsorbing into industry the unemployed? This 40-hour week had the effect of reducing the working week in cotton manufacturing on an average of 25 per cent. An employment survey brought out that during the last week of August the number of persons on mill payrolls had increased to the extent of 140,000 workers, or 40 per cent compared with the first week of March. We have more than brought employment in the industry back to pre-depression levels. The amount of the weekly payroll compared with the first week of March increased nearly 100 per cent.

The cotton code forbids the employment of minors under the age of 16 years. This provision has attracted public attention to a degree all out of proportion to its true significance in the cotton textile industry. Magazine writers have hailed it as ending a regime of large scale employment of children in cotton mills. Anyone who will take the trouble to examine the reports of the U. S. Census will see that the employment of minors in recent years has been negligible and in 1930 amounted only to approximately 3 per cent of the total persons employed in our industry at that time. Three-fourths of this number had reached the age of 15 years. We had every reason to believe that the employment of minors under 16 had reached practically the vanishing point since 1930. Nevertheless the cotton textile industry committee was glad to include this provision in the first code. Just prior to the conclusion of our public hearing, General Johnson referred to the fact that the minimum wage provision in the code would, as a practical matter, in itself have eliminated the employment of minors. He nevertheless congratulated the industry for taking this step which has been followed in all the other codes that have had the President's approval.

Aside from the purely Governmental activities of the NRA in dealing with the cotton-textile code, the administrative activities conducted by manufacturers have centered around the cotton textile industry committee, the code authority.

The code authority, of which General Johnson, NRA Administrator, Dr. Leo Wolman, chairman of the labor advisory council of the NRA, and H. Nel-

son Slater, deputy administrator, are members, has from its inception held frequent meetings at which many of the pressing problems have been solved or studied preparatory to their solution. Among the subjects covered have been such matters as the expansion of the code so as to include branches of the industry other than spinning and weaving whenever such branches have desired this expansion, interpretations of the code, export and import problems, the relationship of NRA to Agricultural Adjustment Act, and their cumulative effect on cotton textiles, etc.

The code itself with its numerous ramifications, especially in respect to provisions affecting the employees has required much of the committee's time in arriving at proper interpretations. Moreover, the committee has been obliged to study and deal with requests for exemption from various sections of the code, particularly that section relating to the limitation of the operation of productive machinery to not over 80 hours a week.

Too much of the committee's time has been taken up with purely defensive matters in the maintenance of the code as presented by the industry and approved by the President. We should remember that in this code a great structure of fundamental law for the industry has been created. Like all pieces of fundamental legislation when once enacted, it should be given the test of time. Attempts should not be constantly made to tinker with its provisions. The code has imposed increased costs and drastic operating changes which have put a great strain upon the industry to finance and put into operation. They also impose a strain upon consumer ability and willingness to pay these increased costs. The industry and the consuming public should alike have an opportunity to adjust themselves to these new conditions. Confidence should have a chance to reappear. Without stability and the restoration of that confidence, neither this nor any other of the basic measures taken under the NRA can hope to effect that rehabilitation of industry upon which the success of the recovery program must depend.

Mr. Sloan next referred to the provision for the registration of existing productive machinery and the requirement of certificates for additions thereto, which is explained in detail in the address of Mr. Gossett, reported on page 37 of this issue.

The method of handling complaints of alleged violations of the code was next described by Mr. Sloan; this statement is quoted in another article in this issue on the labor situation, page 28.

The Export and Import Situation for Cotton Textiles Under the Code

By Harry L. Bailey

In discussing the effect of the code on the foreign trade of the mills, Mr. Bailey said in part:

For some time past, the industry has been at a disadvantage through the depreciation of foreign currencies, which, together with low wages and low production costs in certain countries, made it most difficult for American cotton textiles to compete on a price basis in the markets of the world. Superimposed upon this difficulty, we have now increased cost of manufacture occasioned by shorter working hours, both for operatives and machinery, and by the higher wages resulting from the industry's acceptance of the NRA Code. Before the adoption of this Code, the struggle to retain export trade taxed every resource of our manufacturers and exporters. Since the application of the Code, it has become a losing fight, and foreign competitors are making heavy inroads on our cotton textile export trade the world over.

Depreciation in the exchange value of the dollar might have been expected to stimulate export trade; but this depreciation is offset by other factors favorable to foreign exporters. We know that the functioning of the Code is reflected in increases which add tremendously to the cost of manufacturing, and that through these increases in cost, foreign manufacturers have gained a price advantage over American cotton textiles in the world's markets.

Recent statistics of the Bureau of Foreign and Domestic Commerce show that our exports of Unbleached Sheetings 40" and under, in June were 5,523,000 sq. yds.; in August they were 2,543,000 sq. yds. Exports of Denims in June totalled 902,000 sq. yds; and in August were reduced to 474,000 sq. yds. The figures for Chambrays show 1,470,000 sq. yds. in June, compared with 668,000 sq. yds. in August. Under the classification "Other Printed Fabrics" we find the June exports were 1,833,000 sq. yds.; while in August they were 1,279,000 sq. yds. Decreases in the export yardage of other finished fabrics show the same trend.

Japan is particularly aggressive in competing for business in what heretofore have been the best markets for our textile exports; but it is of interest, at a time when our own export trade is vanishing, to find that reports from England state that "the latest and perhaps the most encouraging indication of better trade is the expansion of Great Britain's exports."

For example, our export market in Cuba absorbed $3,500,000 worth of American piece goods in the year 1932. In the past three months, Japan has sold $1,000,000 worth of piece goods there; the equivalent, if continued at this rate for the entire year, of the entire Cuban piece goods business of our exporters.

H. L. Bailey

The same situation is extending to the Philippines—our largest export market for cotton goods. True, our goods enter that market free of tariff duties levied on products of other countries. Yet the Japanese exporters, because of the low production cost of their textiles, can land Japanese goods in the Philippines at prices sufficiently low to enable them to surmount the tariff barrier and take business away from American exporters on the basis of lower prices.

Department of Commerce figures show that in one classification alone—that of "Other Piece Dyed Fabrics"—our June exports to the Philippines amounted to 1,042,000 sq. yds., while in August the total was 729,000 sq. yds.

A comparison of prices reveals why the Japanese are making such dangerous inroads on our export trade. On grey goods, for example, the Japanese price in Manila for 36" 3.33 yd. fabric is 4⅛c C.I.F.; the price on comparable American goods is 8¼c—a price differential of from 50 to 100% in favor of Japanese grey goods is the handicap faced by our exporters in the Philippines, Cuba, Colombia, Haiti, and other export countries.

We have reports showing that Japanese Pajama Checks are taking the Venezuelan market from American goods. The Japanese price is 5½c per yd. net C.I.F., compared to 9c for the American fabric.

Japan has invaded Honduras with staple cot-

tons at prices which preclude the possibility of business for American concerns.

Behind this aggressive bid for world export trade in textiles is powerful support given by the Japanese Government through subsidies for industrial and marketing organizations; and under this program the largest subsidies have been given to the textile and export guilds.

Our textile export business has averaged about 7% of the total production of cotton manufacture in this country; in money value this business has averaged over $1,000,000 annually. Expressed in yardage, it represents over 500,000,000 sq. yds. per year, furnishing employment for over 35,000 employees and over 1,000,000 spindles. With the cost of finished cloth increased from 40 to 60% because of the Code, American exporters have no opportunity to fight for the retention of export markets now being taken from them by foreign competitors. None of the competing countries has in its industrial setup the equivalent of hours of labor and the increased costs occasioned by NRA. The American textile industry's acceptance of this new economic theory has given foreign industries a tremendous advantage in their export trade position. Their selling prices are still based on low costs resulting from long working hours and low wages. To permit our export trade to be destroyed cannot but seriously retard the effort to rehabilitate the domestic cotton textile industry, and the maintenance of the place in foreign trade, which has been built up through the expenditure of incalculable money and effort, has an importance far greater than is reflected by the figures showing that it represents 7% of our total annual production.

Difficult questions also have arisen in regard to imports. Higher domestic prices due to the Code have made us more vulnerable to foreign competition in our own domestic market, and the threat of increasing shipments of cotton textiles to this country from abroad is serious. Already in some branches of our domestic textile industry, imports have had destructive effect. There is an increasing flow of certain types of cotton goods which, despite duties, freights, and other costs, from which competitive American merchandise is free, can be sold to the consumer at prices which displace American goods in the home market.

Depreciation in the exchange value of the dollar might have been expected to stimulate export trade, but this depreciation is offset by other factors favorable to foreign exporters. Thus we see imports increasing, and exports waning.

Here, again, Japanese competition is the greatest menace. Japan is not only winning our export business in grey and bleached Sheetings, Denims, Colored Cottons, and in fact all staple goods, but Japanese exporters are after the American market also. Recently a number of New York selling agents received a letter from the New York agency of a firm described as one of the oldest exporters and importers in Japan. This firm specializes in cotton piece goods, and the letter stated that large quantities are regularly shipped from Kobe to Australia, India, Africa, Egypt, and other countries. Their objective was to establish connections with a local firm interested in handling Japanese cotton piece goods in the New York market, and it was also stated that this Japanese firm wishes to extend its export market for cotton goods to Central and South America through the intermediary of an American firm, goods to be either transhipped to New York or shipped direct to these markets. Here is an enticing opportunity for an American selling agent.

In 1930, our imports of cotton floor coverings totalled 4,302,000 sq. yds., valued at $1,715,000. In 1932, these imports were 9,415,000 sq. yds. valued at $3,707,000. For seven months of the present year, these imports were 7,665,000 sq. yds. with a value of $1,990,000.

Imported cotton rugs of various kinds are deluging our home market. One type of Japanese cotton chenille rug can be landed here at 42c, while the cotton content alone of a similar rug of American manufacture would cost over 72c. Agents of domestic cotton rug manufacturers located in New York City have reported that importers of Japanese rugs send their customers to our domestic showrooms with instructions that they may select any domestic pattern desired, and the Japanese importer will supply an exact duplicate of it at 50% less than the price for the domestic article.

A similar situation is illustrated by fish netting. Low priced netting is being offered in the American market by Japan, Germany, Holland, Great Britain, and Scandinavia.

Japanese netting, 1½" mesh 10-6/ply thread is offered delivered duty paid on the Pacific Coast at $43.47 per hundred pounds. The price of comparable American Netting is $127, the cost of the thread alone manufactured in American mills being more than the entire cost of the Japanese product. American Netting manufacturers report the loss of important business due to this situation.

The New York Custom House reports that for July importations of Tire Fabric and Cord amounted to 46,472 lbs.; for August 137,768 lbs., while the Custom House records indicate that for the whole year 1932 only 700 lbs. came into this country from foreign producers.

The remedy for this situation might be in the form of an equalization fund applicable to exports. With the support of such a fund, manufacturers could meet foreign price competition in markets already established, and preserve a trade which is threatened with extinction, while the fund need not be a burden upon the American taxpayer, since it could be set up from receipts from the Processing Tax on imported cotton goods, and the compensating taxes provided in the Agricultural Adjustment Act on materials competitive with cottons. Representations have already been made to Washington by the Cotton-Textile Institute and the Textile Export Association, and the proper officials have been fully informed as to the existing situation and the suggested method of relief. Action is imperative; we urge that relief measures for this critical situation be both prompt and adequate.

Present Day Relationship Between Cotton Textile Costs and Prices

By Ralph E. Loper

Mr. Loper declared that there were three provisions of the code that had a direct and important effect upon the manufacturing cost in every cotton mill—1, the 40-hour work week for operatives; 2, the same weekly pay for 40 hours as was previously paid for the longer week; and, 3, a minimum wage of $12.00 in the South and $13.00 in the North. He explained:

These three provisions of the code increased the manufacturing cost of textile mills in some sections much more than in others. Mills whose operating schedules were already limited by law to 48 hours had their labor costs increased 20% before putting into effect the minimum wage provision. Mills which were operating on a 55-hour schedule had their labor costs increased 37½% before they applied the minimum wage provision.

After adding the increases caused by the mini-

mum wage provisions, we get a total increase of over 100% in the labor costs of many mills. The average labor cost per unit of product for the industry as a whole increased 70%.

The forty-hour week with an eighty-hour limit on machinery increased the cost per unit of product for taxes, insurance, obsolescence and all the other fixed items of overhead which must be spread over a smaller weekly production.

The costs of fuel and supplies of all kinds and machinery replacements have also materially increased because other manufacturers are operating under codes which have increased their costs and compelled them to obtain higher prices.

The provision of the code which limits the operation of productive machinery to 80 hours per week is an extremely important valuable provision. It is vital to the success of the whole program that this provision should be permanent. It has increased the cost in mills which persistently ran on longer schedules, but has had little effect on the average cost for the industry, because the third shift is rarely ever an efficient shift and is not required to meet consumer demands. Stopping the third shift in one plant means increased operation on the first or second shifts in some other plant.

R. E. Loper

On August 1st a processing tax amounting to 4.2c per pound net weight of cotton opened was applied to the textile industry, this tax applying uniformly per pound of cotton regardless of grade or length of staple. This adds 30% to today's cost of 1 3/16" staple cotton and 45% to the cost of short cotton used is making coarse yarns and heavy work clothes.

This tax is expected to yield $110,000,000 during the cotton year of 1933 and 1934, yet it is spoken of as being unimportant to the ultimate consumer amounting to less than 8 cents on a sheet, 8¼ cents on overalls and a trifle over one cent per yard on unbleached muslin, etc. Actually this tax will collect from the consumers in one year more than the combined net profits of the cotton textile industry during the best year it has had since the world war.

The processing tax is expected to collect more than twice the amount of money the industry is allowed to include for depreciation on Federal tax returns. The processing tax amounts to six times as much as the cotton textile industry pays for all state, county and municipal taxes. Again this sum would have paid all the operatives employed in the cotton textile industry in March, 1933 for a period of nine months at the rates then prevailing.

Unless this phenomenally burdensome tax can be removed it is essential for the protection of the industry that compensatory taxes be levied promptly upon competing products. Already examples are numerous of customers who have changed from cotton to paper towels or from cotton to burlap bags with cancellation of orders for cotton products.

Examples of Increased Cost

To show the actual results of operation under the code and the processing tax, a careful study has been made of the present cost of manufacturing in representative groups of Southern and Eastern mills. On October 7th the cost of cotton was added to these manufacturing costs and the total was compared with the selling price of the various fabrics and yarns with the following results:—

The group of fine combed fabrics included a broadcloth, a lawn and a pique. These three standard fabrics showed an average loss of .47c per yard before interest. To return six percent interest on investment at replacement cost requires on these fabrics 2.97c per yard.

A similar calculation on October 7th for a group of typical print cloths showed an average of 1.72c per pound earned toward interest, which is equivalent to only 2.38% interest on investment at replacement cost.

A typical group of narrow sheetings showed an average of .83c per pound earned toward interest—equivalent to 1.75% interest on investment at replacement cost.

A representative group of carded hosiery and warp yarns showed an average earning of 1.48c per pound, or 3.2% interest on investment at replacement cost.

Combed yarns with mercerizing twist in ball warps showed an average earning of 2.67c per pound, or 1.62% interest on investment at replacement cost.

These five groups taken together should give us a fair cross section of the industry. On the basis of prices on October 7th they show an average yield of 1.6% on the investment at replacement cost. Some textile plants were constructed when costs were much higher than the replacement basis. Others were built for less than replacement cost. Taking all these facts into consideration it is fair to say that the cotton textile industry as a whole is now earning a lower rate of interest on its actual investment than the United States Government pays on its bonds.

The cotton textile industry is in a fundamentally sound position. Earnings are still extremely low, but we are better off than we were a year ago, and better than we were two years ago. The eighty-hour limit on machine operation has gone a long way toward removing the menace of over-production. The long decline which started early in 1924 and the liquidation which has accompanied it has reduced the available productive equipment to about the level of 1910. In 1910 the work week for textile operatives varied from 54 hours to 60 hours and upwards. Today under the code it is 40 hours, and during the interval since 1910 the population of the United States has increased more than 35%. With the increase in purchasing power expected under the NRA the prospects of the industry should be bright indeed.

A study of the relation of the active spindle hours reported for the industry, and the margin available to cover manufacturing costs, indicates quite clearly that during periods of normal activity in other industries, the nation is able to absorb the product of eight billion spindle hours per month, and to pay prices which yield a reasonable manufacturing margin. Between January, 1930 and May, 1933, the activity of the industry was at all times well below this figure. It averaged for this period of over three years 6,220,000,000 spindle hours per month. Sooner or later the effect of the deficit of cotton goods thus created will be keenly felt and will produce better manufacturing margins in cotton textiles.

There is, however, no possibility of profiteering by textile mills. This is well guarded against by the presence of over 1,000 competing units in the industry, with the largest unit operating only about three percent of the spindles. Profiteering is also made impossible by the terms of your code which allows 80 hours operation for productive equipment. Many mills are so situated that they cannot run two forty-hour shifts, but sufficient mills can do so to assure a safe margin of reserve capacity.

During the eight week period ending September 9th at least 68 mills were idle for from one to three weeks each, yet manufacturing margins are narrower today on cotton textiles than they were July 17th.

Will Labor Meet Its Responsibility in the Program of Recovery?

Labor, asked to make no contribution except cooperation to the program from which it has secured so much, must certainly "do its part" . . .

WHILE the matters of increased cost, sluggish markets, and inequalities in competition imposed by the cotton processing tax continue to present to the mill man their respective worries and difficulties, the subject of labor relations occupies a position of constantly increasing importance in the textile picture. With the experience of several months, and through gradual adjustment, the industry generally has settled down to comparatively smooth operation under the provisions of the code, but the question of collective bargaining and unionization under Section VI of the code (original Section 7 (a) of the NIRA) is coming into greater significance.

There is no legitimate doubt that, just as they have endeavored conscientiously to abide by every phase of their code, the manufacturers as a whole will, so long as this stipulation is a part of the code, make every possible effort to carry out its provisions. Nor can there be the slightest doubt that the Cotton-Textile National Industrial Relations Board, headed by the capable chairman, Dr. Robert W. Bruere, will exercise, to the fullest, patience, impartiality and fairness in the disposition of matters brought before it under the code, which established this board as the agency for dealing with complaints arising from the "stretch-out" or specialization of work, or other conditions of working. The same is true of the various state boards which are being selected to function under the national board in accordance with Section XVII of the code.

Analysis of Complaints

In his interesting talk at the Boston meeting of cotton manufacturers, Dr. Bruere emphasized that patience and co-operation, and full understanding, will solve many of the difficulties. He pointed out that a majority of the complaints received by his board resulted from lack of information and understanding. In this connection, an analysis of the first 641 complaints received by the board, as made by L. R. Gilbert, secretary of the board, is interesting. Mr. Gilbert reported that 194 of the complaints dealt with "those out of work, including the aged, the slightly incompetent, the partially incapacitated, the so-called sub-standard, and those who, while expert craftsmen, are naturally slow and unable to produce a volume of production sufficient to justify their being paid a minimum wage"; 411 of the complaints were from "cleaners, sweepers, outsiders and others whose complaints are due more to lack of knowledge of the code than to any violation of its provisions;" while only 36 of the complaints dealt with matters that might be interpreted as "stretch-out" or overload.

An example of how complaints are handled is provided in the experience of a southern cotton mill. Complaint had been made that three women splicers had been laid off on the grounds that the splicing table had been eliminated. It was later found that the table had not been eliminated, and that one of the discharged women had been re-employed. Employers agreed to compose a committee of three of their representatives to discuss the matter with a committee of three workers. After due consideration of the complaint it was found that the women employed had formerly "spliced so few ends as to make it unprofitable to splice the yarn", and when the one re-hired had been put back to work, she soon developed enough proficiency to earn more than the minimum wage. Explanation of the management-worker committee proved satisfactory to the employees concerned.

How Complaints are Handled

Dr. Bruere in Boston referred to the establishment of conditions which resulted in a resumption of work at the Lane Cotton Mills in New Orleans, after a shut-down. A strike of workers at the Standard-Coosa-Thatcher mill at Piedmont, Ala., was arbitrated in September, with the employees signifying confidence in the Alabama cotton textile industrial relations board.

As time goes on, there will be complaints received by the various state industrial relations boards. It appears to be the intention of these boards to take prompt and effective action in each case, and they apparently will pursue the policy of the national board of endeavoring to establish first a clear understanding by those involved of the principles of the code's provisions, in the logical belief that many complaints will, under the light of true facts and complete understanding, be dissipated.

Commenting on the complaints received concerning alleged violations of the code, George A. Sloan, president of The Cotton-Textile Institute, said in his annual address on October 18:

"The number of complaints has been greatly magnified in certain quarters. So far the Institute's field staff has investigated or otherwise dealt with approximately 350 complaints, and on last advice there was still in their hands something short of 200 complaints awaiting investigation. Many of those investigated have been found to be justified but very evidently had resulted from a misinterpretation or lack of understanding of the code provisions on the part of the mill executives or their subordinates. In no single case has there appeared to be any premeditated violation of the code. * * * As a matter of fact many of the complaints show on their face that there has been no violation

of the code. They sometimes relate to alleged actions occurring prior to the adoption of the code, in some instances as far back as 1932. Often they deal with matters which constitute no departure from the code provisions. This situation is undoubtedly due to an incomplete understanding on the part of many people who are not thoroughly familiar with the provisions of the code. But the code is being better understood as time goes on, as borne out by the fact that the number of complaints reaching the government and the Institute grow smaller with each week. It would be unfair, however, to say that the volume of complaints, limited as it is, is by any means wholly due to lack of understanding on the part of mill employees. It is clear that there has been some natural uncertainty among manufacturers themselves as to just what was meant by certain provisions and that in some cases such doubts have been resolved in a manner that led to complaint on the part of the workers."

Mr. Sloan explained the procedure of handling complaints. They are all routed to the offices of the Cotton Textile National Industrial Relations Board, from where, after the name of the complainant is eliminated, they are sent to the Institute's office and to the Institute's field staff, the latter investigating the circumstances fully, making a report to the Institute's office, whence it is forwarded to Dr. Leo Wolman, chairman of the labor advisory council of NRA, and also to the Cotton Textile National Industrial Relations Board. Mr. Sloan referred to a recent statement of Mr. Bruere, chairman of the latter board, that a total of some 800 complaints had been received. "When we compare this number with the 465,000 employees working in cotton mills in the month of August, we get some idea as to the smoothness with which the cotton-textile code is functioning in respect to its labor provisions," said Mr. Sloan.

A Mill Man's Viewpoint

The burden of applying the terms and provisions of the code has been placed entirely upon mill management, there having been no demand made upon labor. This important element in industrial structure has thus far been asked only to reap the benefits of the New Deal, and, in fact, to contribute nothing to it to match the more trying problems assumed under it by management. How labor has benefited in tangible ways is obvious from the increased payrolls, shorter hours, more regular employment, etc. They have received something more, in Section 7(a) of NIRA, incorporated into every code thus far approved, plus an evident encouragement on the part of the NRA administration toward organization. The fundamental argument of union labor will not be taken up here, but it is perfectly clear that up to the present, there has been much done, through the zeal of labor organizers to secure immediately the benefits of the "bill of rights" for labor, which deserves serious consideration.

In this connection, the views of an outstanding manufacturer and merchant in the industry, as recently expressed in private correspondence, are of value. This man, in referring to the address of General Johnson to the American Federation of Labor, draws the obvious conclusion that the General, speaking for the Government, expects and approves the complete unionization of industrial workers in this country. The mill man then continues:

"How fast he expects this to be accomplished he doesn't say—where he expects leadership for this great army of people to come from overnight, he doesn't say. I am under the impression that the present management of industry in this country has accomplished a place for itself by a process of weeding out the fit from the unfit over the years, by a process of trial and error, by a process of proven ability in its own respective field. I continue to insist that today this leadership on the whole is just as unselfish and just as concerned as to what is for the best of all of us in this country, as any group of national labor leaders. There are some better and some worse, of course, in both groups.

"Industry can never thrive on the false premise that owner and worker must be natural enemies. The success of NRA will depend upon finding the proof that owner and worker must be friends. Argument to the contrary, no matter how vocal, is unconvincing. The fact that the continuation of this argument provides means of livelihood for a great army of arguers doesn't help their cause any, but on the contrary hampers the path to industrial peace.

"Speaking for myself, if union labor or any other agency can substitute responsible leadership for industrial workers that will insure orderly attention to the job at hand, that will result in a 6 per cent profit on the invested capital, I would welcome such leadership.

"The difficulty of the union plan, as I see it, lies in the fact that the authority of the present management will be disturbed or destroyed by those who come into our communities, sent there for the accomplishment of that purpose, before there can have developed proven ability to take its place, and as a result, great groups of employees, beguiled away from the old order of things, may find the new leaders unable to lead, or after trial, may be unwilling to follow their leadership with mob action resulting.

"The NRA with codes approved by the Government provides every machinery for handling every question that can arise between owner and employee. Codes as now constituted will of course be amended to fit new conditions. Under the code, maximum salaries can be fixed for executives as well as minimum wages for employees. To save my life, I can't see the need of both the code and a national labor organization that requires for its support the pinching of any part from a pay envelope.

"NRA administrators continue to argue that since industry has become organized that labor is entitled also to organize. It discourages me to have to listen to such an argument. There are 1,000 cotton mills in this country. I wish somebody would tell me where there is any organization among these mills that endangers the rights of the employees in these mills?

"It is true that we are organized under the code in the textile institute and the southern association, but for what purpose? If you please, in order to bring shorter hours and higher wages to the employees, and that to be accomplished at the immediate risk of profits to the mills themselves. But how else are we organized? In groups, to prevent goods from coming into this country, cheap cotton goods from Japan. For whose benefit, please? For the benefit of the worker as much as anyone. We have committees organized to go to Washington to beg the departments there not to put the burden on cotton of a processing tax, or NRA costs, without at the same time putting a like processing tax or burden on these goods that compete with cotton. For whose benefit is this organization, please? The answer, of course, is that it is for the benefit of the whole industry, everyone connected with it, certainly the worker as well as the owner.

"Our industry is operated in the most competitive way. If later on, under the code, there should be some agreement on price fixing, for whose benefit will that be? Certainly first to the employees, as the primary result of such effort would be the stability and permanence of jobs, any tendency toward excessive profits could be handled by code amendment.

"I wish that the administration of the NRA, if they are going to sponsor the unionization of industry in this country, would give some other reason, for the textile industry at least, than that the industry itself is organized, and therefore the workers should join a national organization. The only right of organization permitted to our industry today, that has been exercised by our industry, has been the right to reduce our hours and to increase our wages, and because of that, our employees are now being told that they must organize immediately under some foreign leadership, which is already telling them before our industry has even had a chance to catch its breath, that the hours must be shorter still and the wages higher, and this when Washington continues to say that the whole NRA program is an experiment.

"Under the law, employees are given the right to select representatives of their own choosing to negotiate for them. My experience today is that in no community where such an organization has been attempted, have the employees chosen their representatives but to the contrary, irresponsible men in the several communities have elected themselves to go out and tell groups of employees: 'We shall take you in charge and we will gather you together in an organization under our leadership, and we have nominated ourselves for the job of representing you, and supporting ourselves from dues collected from you.'"

An Example of Mill Profit Trends Under the NRA and AAA

AN actual case, taken from a southern mill's records, of the effect on market, cost and profit on a standard sheeting construction, during the first several months of operation under the cotton-textile code and the cotton processing tax . . . . . .

By E. G. Field

Wm. H. James and Associates

Atlanta, Georgia

WHAT are the results obtained by the employer from the requirements placed on industry by the new Federal acts? It is too soon to tell of the complete effects but it is possible to observe the partial results. Every one was encouraged by the endeavor to improve purchasing power and the manufacturers were happy to see means provided to stop price cutting so that the workers could be paid a more reasonable wage. The inducement was great and the textile industry was the first to respond and enter the co-operative movement. Several months have passed and now it is possible to observe how the profits are being affected.

The two acts that have changed the industrial situation are the Agricultural Adjustment Act approved May 12, 1933, and the National Industrial Recovery Act approved June 16, 1933. Under the NIRA, the Cotton Textile Code was made effective on July 17, 1933, while under the AAA there was placed a processing tax of 4.2 cents effective August 1, 1933, on cotton processed. These regulations coming so close together, it is impossible to distinguish the individual results on sales or customer buying.

There was a rush of business in anticipation of these effective dates that made the industry suddenly exert itself. In the hustle to place orders with the mills, the purchasers ran up the prices rather rapidly. The prices to the customer remain high, the volume of business continues to fall back towards the previous capacity, costs remain high and are increasing, and the manufacturer now is again struggling for business. He is trying to keep his workers employed although he is back to the point of operating at a loss. Sad to relate, the loss is increasing as manufacturers sacrifice their capital in the struggle to provide employment under conditions that are far more difficult than heretofore.

It may be well to examine a specific case to observe how the profits have been affected. For this purpose comparative figures are presented for a standard sheeting. (See accompanying table).

A glance at the last line, showing profit or loss per pound to the mill (italics denote loss) clearly shows how the boom to obtain goods in advance of regulation did provide some profit for a few weeks. Had this little spurt of profit not been available, many mills would have been forced to close. It came in handy and helped to provide the cash necessary to meet the new requirements. It has not been available to the stockholders. Since the code went into effect and the processing tax was applied, there has been a continuous decline in the profit to the mill, and now the loss is running to a substantial figure. There is a limit to which any mill can carry such losses, certainly they can not borrow money without any means to repay the loans.

The rate of pay to the worker has been substantially increased but the combination of conditions prevents the ready sale of goods and will prevent the continued employment of workers. The price of goods to the customer has been increased from 5½ cents to 9½ cents per yard and has unquestionably hurt sales. The processing tax has thrown an unfair advantage to products that compete with cotton and accordingly is directly injuring the cotton growers, the cotton mill hand, and the manufacturer, with all dependent business.

While we can not see the final outcome, the increasing loss and growing difficulty certainly is apparent. The immediate attention of the leaders of the industry is now more needed than ever before. While they are working with this complex problem, they can be greatly assisted by the continued understanding co-operation of the workers toward the solution of the difficulties.

COMPARATIVE MARKET, COST, AND PROFIT
40"—48 x 48—2.85

Date 1933	May 3	June 3	July 3	Aug. 3	Sept. 2	Oct. 3	Nov. 3
Market per Yard	5.500	7.500	9.000	11.625	9.500	9.500	8.875c
Market per Pound	15.675	21.375	25.650	33.131	27.075	27.075	25.294
Cotton Month	July	July	Oct.	Oct.	Dec.	Dec.	Dec.
New York	8.24	9.20	10.40	10.56	9.54	9.84	9.56
Basis	+.15	+.15	+.10	+.10	—.25	—.15	even
Delivered	8.39	9.35	10.50	10.66	9.29	9.69	9.56
Process Tax	---	---	---	4.00	4.00	4.00	4.00
With Tax	---	---		14.66	13.29	13.69	13.56
Waste Loss	1.26	1.40	1.58	2.20	1.99	2.05	2.03
In Cloth	9.65	10.75	12.08	16.86	15.28	15.74	15.59
Margin Over Cotton	6.025	10.625	13.570	16.271	11.795	11.335	9.704
Cost Over Cotton	7.788	7.788	7.788	13.170	13.170	13.170	13.170
Profit or *Loss* per Pound	*1.763*	2.837	5.782	3.101	*1.375*	*1.835*	*3.466c*

Note: *Italics* denote Loss.

The Practical Application of Starches, Gums and Dextrines In Finishing Cotton Piece Goods

(Continued from the September Issue)

By J. Andrew Clark
Chief Chemist, Dutchess Bleachery, Inc.

HERE Mr. Clark resumes his series by giving very practical suggestions in connection with the operation of the finishing processes using Starches, Gums and Dextrines. A splendid analysis of these products was given in the September issue, as a part of this series discussing the raw materials used in finishing cotton piece goods. Other installments already published have covered Water and Softeners. The next will discuss Fillers, etc.

STARCH MANGLES adaptable for finishing a wide variety of fabrics are commonly composed of two bowls. The lower is brass, sometimes rubber, while the top may be one of several kinds, such as maple, rubber or cotton wound. The bottom bowl is driven and runs in the starch box, which is fed ordinarily by gravity from two elevated tubs. Twin tubs are used for the most part to permit continuous operation with long runs, and because of the high viscosity of the mix, relatively large pipes are used. The top bowl is of relatively large diameter and runs by friction. Thin fabrics are passed through the nip directly since sufficient mix is carried up by the bottom to furnish enough to completely penetrate the fabric. Heavier fabrics are passed under the mix before going through the nip to insure thorough saturation and penetration.

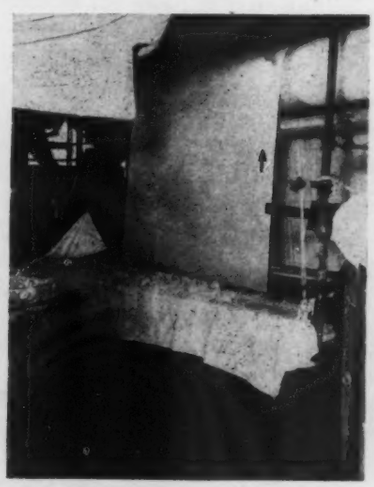
Machine Construction and Speed

The machine construction and speed also affect the finish obtained with a given formula; rubber or cotton top bowls permit more mix to be picked up than when wooden bowls are used. Slow machines act in the same way in comparison to faster machines. Variations in the set or pressure on the mangle bowls influence the amount of mix picked up by the cloth, while an excessively thick mix not only causes slipping of the top bowl but may cause the filling threads of light goods to be distorted—and produces a so-called "chatter". This tendency to slip with heavy mixes may be overcome by the use of the Scotch or friction mangle, which consists primarily of a geared drive for both top and bottom bowls, with a friction effect produced by the gearing to rub the finish into the cloth. This permits of a much heavier finish than can be obtained by the ordinary mangle.

Boiling the Mix

In boiling the mix, the starches are stirred into a small amount of cold water and thoroughly mixed, after which the fillers are stirred in to be followed by the softeners. The mix is then diluted nearly to the finished level and carefully brought to the boil, after which it is maintained there for a definite time, such as or 10 minutes. Carelessness in this results in variations in viscosity or even dusting when underboiled. Live steam from open pipes is commonly used

BACKFILLER: RUBBER BOWL
Doctor blade at front in operating position. Clearing blade in rear raised



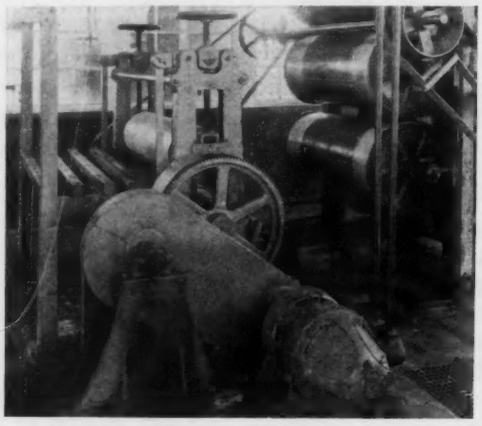
BACKFILLING
Narrow sheeting on wide backfiller to illustrate path of cloth . . . .

TWO-BOWL STARCH MANGLE
Note: Tension device at top; tension rails; guiders to center of cloth . .

although there are many advocates of closed coils. A serious disadvantage of closed coils is the tendency of starch to be overcooked locally on the surface of the pipes to form lumps. Open coils, on the other hand, may give the appearance of boiling with thick mixes, which unless checked with a thermometer, may be deceiving. After boiling, the mix is diluted to the proper height in the tank and permitted to stand a few minutes to enable skimming off any floating particles. Following this, the mix is run into the mangle and run a few minutes before introducing the cloth, to get the temperature of the machines uniform and thoroughly wet the bowls with the mix.

Arrangements for Starching

Starch mangles are frequently arranged in range with a set of cans for half-drying and a hot frame for final drying, while bringing the cloth to width. preparatory to calendering. Trouble is occasionally encountered by starch sticking to the first can or two and then flaking off. This usually happens when the cloth carries an excess of water or a deficiency of softener. It may be remedied in several ways, one of which consists in passing the cloth over water cooled rolls before drying on the cans. Another system is to use the first can water-cooled with the second a blank can, followed then by the hot cans. When this trouble occurs only occasionally, it can be prevented as a makeshift by lapping the first can or two with a few layers of cloth to give more gradual drying.



Courtesy, H. W. Butterworth & Sons Co.

Pure starch mangle, in range with drying cans and tenter . . . . . .

For some fabrics, the frames are regulated to give a reversed reciprocating motion to the filling in the direction of travel through the frame, commonly called swinging. This motion can be approximated by grasping the selvages in each hand and, while holding the filling taut, pulling on one side while pushing on the other, then reversing the motion. Swinging is used to break down the binding effect of the starch film while drying which permits the individual warp and filling yarns to act independently of each other and thus gives an elastic, springy action as found in organdies, for instance. Without the swing motion, the warp and filling yarns are, of course, bound together by the starch mix.

Faults Encountered in Starching

When heavy fillings are needed in the absence of friction mangles, two and sometimes three runs through the starch are employed with alternate drying. This is expensive in both time and material and in a plant which has an efficient cost system, will probably be found unprofitable if competition is present.

In starching, several minor faults crop up from time to time, the cure for which rests in the proper discipline and supervision of the operatives. In the first case, dried cloth standing in boxes before starching may be exposed to water drops falling as condensation when placed under overhead water pipes. In passing through either the starch mangle or back filler, these spots absorb less filling and bluing to appear as open and off-colored areas even if no iron stain is noticeable. Then again, unless the brass bowl is maintained thoroughly clean, verdigris may in time form on the ends which, if detached while running, gives dull greenish verdigris spots. Imperfections in the bowls, such as checking or knot holes in wooden rolls, give corresponding repeating imperfections which are remedied only by turning down the bowl.

While cotton-wound bowls save the necessity of grinding down rubber bowls or turning wooden ones, they cannot be used to best advantage with short runs, nor when different colors are used, since the former mix must be thoroughly washed out, and any color in the yarn bleached when changing from one color to another.

While the amount of the finishing mix picked up by dry cloth from a given formula actually varies according to the several factors such as type of bowl, speed, set, and temperature, it can be estimated roughly at 100 per cent of the cloth weight for thin mixes. The increase in weight of the finished cloth would then correspond approximately to the percentage non-volatile constituents of the mix. This does not hold true with heavy mixes nor for cloth run directly from the water mangles. An analysis of sheeting so run showed the dried cloth to contain only 40 to 45 per cent of the amount present in the paste. This value would vary inversely in relation to the amount of water remaining in the cloth following the water mangle. Less finishing paste is absorbed from a given mix by cloth previously starched, and when it is necessary, this should be taken into consideration. Practical finishers can closely estimate the amount of materials required in a mix to give a definite weight through an acquired knowledge of the yardage obtained and a consideration of the amount necessary to fill the mangle box.

The various formulae run, from light mixes to a limit approximately one pound to the gallon of a mixture of one half starch and one half thin boiling starch or dextrine. Beyond this concentration difficulty may be encountered from slipping of the bowls. An example of a light mix, for instance, such as for a nainsook is as follows:

Nainsook: 30" 6.85-yd 64/60 Finished 30"
5 lbs. Corn Starch
5 lbs. Tapioca Starch
20 lbs. Stearic acid Softener
Made up to 50 gals.

An example of a fairly heavy mix is:

Nurse's Uniform: 40" 2.85 yd. 48/48 Finished 36"

30 lbs. Corn
30 lbs. Tapioca
50 lbs. Dextrine
50 lbs. Tallow Softener
5 oz. Indanthrene Blue

Made up to 140 gals.

And finally, in finishing two cloths of the same type, but of different counts it is axiomatic that less material is needed in the mix for the higher counts.

The Process of Backfilling

As explained in a former article, backfilling is the process of applying the starch mix, with or without various filling and weighting materials, to the back of the cloth. The object of this is to leave the original face, while filling the interstices between the yarns to give a more closed up and superior appearance as well as to increase the weight of the backfilled fabric.

In applying the finish, the fabric is passed face-in around a large rubber or wooden bowl deeply submerged in a large semi-circular box containing the mix. An adjustable doctor blade squeezes this into the back of the cloth and wipes off the surplus, while a wiper blade at the rear maintains the surface of the bowl clean and free of adhering starch.

A horizontal agitator is also submerged in the box, below the doctor blade, to prevent heavy fillings from settling out and to maintain the mix in a homogeneous condition. Careful maintenance and close supervision in operation are, moreover, especially necessary to produce superior quality. Lint or solid particles collecting under the doctor blade cause streaks through absence of backfilling. Rubber bowls are not quite so susceptible to this because of their resiliency, which permits the smaller particles to slip through without forming these streaks. In time, streaks may also be cut into the selvage positions, to give irregular finishing, which then necessitates turning the bowl in the case of wooden ones or grinding for a rubber bowl to remove the cuts and depressions.

Thin mixes may penetrate through the cloth to the face where a chalky appearance is caused, while on the other hand, mixes that are much too heavy cause skipping, a condition that leaves irregular open places devoid of backfilling. The addition of wetting-out agents, however, helps to prevent this to a great extent.

Wrinkles, Water Drops, etc.

Wrinkles and water drops or other damp areas do not receive the full amount of finishing and also come up as thin places. Bluing is sometimes necessary with some fabrics, such as sheetings for example, preliminary to backfilling, otherwise the face would have the characteristic creamy white color of untinted cloth with the back showing a decided contrast. Dyed goods, moreover, are generally backfilled with colored mixes to prevent a pronounced two-sided effect.

This operation may be run with either dried cloth or with fabric direct from the water mangle, but in either case, care must be observed that the moisture content is uniform throughout the lot, and that the cloth is not too narrow in relation to the finished width. On drying and pulling out to width, such cloth may show pin holes from two to four inches in from the selvages, through breaking of the starch film at these places.

Formula for Backfilled Book Cloth

Mineral fillers are commonly added to these mixes for the purpose of increasing weight, clay, talc and calcium sulphate being the most commonly used. While these can be used to the extent of one and one-half times the weight of the starch without dusting, more can still be satisfactorily used if a binding agent is also added to the mix. Rosin size and various gums are so employed, although the use of rosin is open to the suspicion of yellowing in storage. If used alone with starch, these mineral fillers impart an excessively harsh feel to the cloth, thus necessitating the addition of softener to the mix. It has been found in this connection that those containing some free fat are especially desirable for this class of work.

The following is offered as an example:

Backfilled Book Cloth

Grey: 38½", 6.25 yd. 60x48 — Finished 36"

Formula: Made up to 100 gals.

80 lb. Corn Starch
18 lb. Potato Starch
32 lb. Dextrine
4⅓ pails Clay
43 lb. Sulphonated Tallow Softener
4 oz. Ultramarine
8½ oz. Sofranine

On analysis, the total finish was found to be 24.7 per cent of the finished weight, or the cloth had picked up then approximately 33 per cent of its own weight of finishing materials.

While the finisher develops his final finish around a zealously guarded starching formula, most fabrics require additional treatment such as calendering, to give them the required market appearance. Skillful use of the calenders also compensates in great measure for variations in the starched cloth. If, for instance, the starched cloth feels too stiff, less water is employed in sprinkling before calendering than with a softer cloth, a matter of judgment for the most part.

For example, nainsook, the starching formula of which was given earlier, may have one run, three nips, hot, 25 tons, no sprinkle. Muslin, on the other hand, may be given only one run, two nips, with just the weight of the bowls themselves, and if the starched goods are stiff, only a very light sprinkle; or if soft, slightly more water can be used.

The use of starches and similar products complies to no rigid classification, practically any finish being capable of duplication with other ingredients, price and experience and salesmanship being strong factors. It would seem, therefore, that a fertile field exists for careful revision of formulae from time to time in the interests of economy, according to market conditions, since small differentials such as 25 cents a hundred pounds represent from 5 per cent to 10 per cent of the cost.

(The next article in this series will discuss Fillers, etc., as another group of the important basic materials used in finishing cotton piece goods.—The Editor.)

Cotton Opening, Oil Spraying and Other Subjects Discussed at Gastonia

Reported by Robert W. Philip

SUBJECTS pertaining to cotton, and cotton opening, mixing, picking, oil spraying, etc., were among the topics discussed at the meeting of the Gaston County Division of the Southern Textile Association, held at the Smyre Mill Community House in Gastonia, N. C., on Friday evening, October 20. Marshall Dilling, executive secretary of the association, and superintendent and secretary of the A. M. Smyre Mfg. Co., conducted the discussion.

This division of the association is devoted entirely to the discussion of mill problems as they relate to fine combed and carded yarns, which is largely the product of the Gaston county territory. The fact that the men participating in the discussion, which is reported here, base their statements and opinions on experience on the finer numbers of sale yarn and on the use of long or "staple" cotton, should be kept in mind.

1932 Cotton Better than 1931

The discussion of the first question, as to the relative quality of the 1932 crop of cotton—the one that has been used for about a year now—as compared with the 1931 crop, developed almost unanimous opinion among the fine yarn spinners that the 1932 crop has proved to be considerably better than the 1931 crop, but not up to the standard of former years. Several men who had already been running some of the new 1933 crop reported that it appears to be satisfactory, but experience on this year's crop thus far was very limited.

Mr. Dilling and several others stated that the 1931 crop was the poorest in years; that it was very fluffy and contained a lot of fly, and that its poorer quality lowered the breaking strength obtainable. One man reported that he had to take out 5 per cent more waste on the 1931 cotton and still did not get a desirable break; but that on the 1932 crop, while he had restored his normal waste percentage and improved his strength, still it was not up to the standard of previous years.

Methods of Ageing Cotton

Mr. Dilling explained that the question was brought up because it "was proven that on the 1931 crop the trouble was on account of the long, hot dry fall that caused the cotton to open before it was properly matured; after it was open it never had the same strength. We have had some of that same weather around here this year, and if it extended over the cotton belt generally, we may have some of that same trouble to confront us."

G. R. Grice and W. L. Long reported from a short experience on the 1933 crop that the staple seems to be running shorter than on the previous crop, buying the cotton from the same farms which presumably used the same seed as last year.

Mr. Dilling next asked whether it is necessary to open up the cotton bales and let them stand for three or four days before using, then tearing it up by hand. It was generally agreed among him and D. H. Whitener, Walter McLoud, and others who discussed it, that whereas a number of years ago it was felt necessary to do this, and was undoubtedly necessary, that at present, the modern cleaning and opening machinery has made this pre-ageing unnecessary and that it is just as effective to run the cotton straight through into the machinery immediately upon opening. "Our present-day machinery opens it up and lets it aerate," said Mr. Dilling, "and that is the object of opening; whether you do it in 30 minutes or a day, if this purpose is accomplished it is just as good."

The foregoing discussion referred to American cotton. As to Egyptian, compressed, those discussing the subject were of the opinion that it is necessary to allow the foreign cotton to stand for a couple of days, because of the high density used. "Our machinery is made to handle the American compressed bale, and is not intended for handling the high density Egyptian," it was brought out.

There was some discussion as to the best way to handle "big-bale" cotton and high-density compressed cotton, in running it together. One man stated that he runs them separately and mixes the laps equally on the finisher picker aprons (running two-process picking). Several said they had tried, without complete success, mixing the bales before running. It seemed the general opinion that, when necessary to run both regular compressed and high density it is best to let one follow the other.

Feeding Heavy or Light on Pickers

Discussion on the merits of vertical, horizontal and COB type cleaning machines brought the opinion from John W. Long, of Clover, S. C., that he prefers the vertical type to the others; that it may not clean any better but it works the cotton better; the COB machine, he said, is not good for taking out heavy foreign matter. However, he said, he has changed his method of cleaning from a single bale breaker and vertical opener to a double bale breaker with cleaning trunks, and does not use any other cleaner; the first cleaning trunk is equipped with a revolving apron which empties the motes, etc., it collects and the second trunk has stationary grids.

The next question asked whether it is better to feed heavy or light on pickers; "if you feed heavy you feed slow, and if you feed light, you feed faster." Mr. Grice said he had tried both ways and was

unable to detect any material difference. W. N. Williams, of Lincolnton, said, "for the last few years I have been feeding as light as possible, beating the cotton as little as possible and still getting the cleaning." D. R. LaFar brought out that this matter depends on the cotton used, the amount, etc., that you must have a certain amount of cleaning, but that it is best to accomplish this with as little beating as possible. Generally speaking, it was agreed that light feed is better than heavy feed.

One-Process Picking

Mr. Dilling, W. N. Williams, and D. R. Adams all expressed satisfaction with one process picking, as to evenness, breaking strength, and otherwise. Mr. Dilling said he has used both the regular one-process machine, and a job changed over with existing machines hooked together, and that he gets equally good results on both; that "for the amount of money required I would rather synchronize existing machines than to buy the new machine." Mr. Williams brought out that a change-over one process system gives him considerable advantage in labor required, and produces even laps, and saves power. Mr. Adams has equipment hooked together with the synchronizer between, and said he does not lose nearly as many laps as with two separate processes.

Beater Speeds

It was clearly demonstrated that the speeds now used on picker beaters is considerably lower than what was previously considered necessary. As to the types of beaters used, and the speeds run, Mr. Williams stated that he prefers the Kirschner beater in the breaker beater (following a Buckley in a preceding machine), and that he runs this Kirschner at about 450 r.p.m. W. L. Long reported a two-blade beater in the breaker, and a Kirschner in the finisher. Mr. McLoud, on three-process picking, runs a two-blade beater in the breaker, 850 r.p.m. (39 beats per inch); a two-blade in the intermediate, 780 r.p.m. (38 beats per inch); and a two-blade in the finisher, 750 r.p.m. (40 beats per inch.) Mr. Grice uses a blade beater in the breaker and a Kirschner or carding beater in the finisher; he added that he has reduced the speed materially. Mr. Dilling brought out that a number of years ago practically everyone thought it necessary to run a beater up around 1,500 r.p.m., but that general practice in recent years has been to reduce this speed materially.

There was a brief discussion as to the Buckley type of beater. Mr. LaFar said his understanding was that originally this was presented for the finisher "because it was claimed to produce a softer, better worked lap", but no one present approved of its use in a finisher. John W. Long said he uses a Buckley in the breaker and that it gives good cleaning and does not injure the cotton; Mr. Williams said he likes the Buckley as the first beater to act upon the cotton.

A question as to the setting of the Kirschner beaters used produced answers showing that around ⅛-inch, on 1 3/16-inch, was the customary setting. In connection with Kirschner beaters, Mr. Dilling brought out that, "a matter of more importance than the setting on a Kirschner beater is the condition of the points. If you let them wear off round you have practically got a blade beater—and I have seen them worn down about that much. I think it is just about as important to keep a good lug with pointed teeth on the Kirschner beater as it is to keep the card clothing ground." He agreed with Mr. LaFar that the same thing applies to a blade beater, but in a different way and not to such an extent.

Fan speeds in pickers came up next. Mr. McLoud reported that he had found it possible to produce excellent results, and prevent split laps, with low fan speeds. He said around 700 r.p.m., on a blade beater, gives good results; that with a low speed the draft will allow the cotton to be distributed evenly on the screen, and will not throw it on in lumps. He was speaking of a lap of around 12 to 14 ounces.

Spraying Oil on Cotton

The next question asked for experience with spraying oil on cotton; also as to the best place of applying the oil. G. R. Grice said he had originally started applying the oil in the hopper, and now is applying it just back of the feed roll; that it gives good results both ways, and will help the work if applied at either place. Another mill he had visited applied the oil between the two middle laps on the apron of the finisher picker. "I first put it in the hopper, then the vertical opener, and now I'm putting it in just behind the feed roll," reported D. H. Whitener. He said the latter method enables him to put more oil on. Mr. McLoud said he applies the oil at the breaker picker, just behind the first feed roll, that he has not tried it at the finisher because he felt that would get the oiled cotton to the card too quickly. Mr. Adams applies oil behind the finisher feed roll.

MARSHALL DILLING, executive secretary of the Southern Textile Association, who presided at the meeting in Gastonia

"My experience is when you apply the oil in the hopper or feed pipe, you get the oil on the cotton and dirt and other impurities," said Mr. Dilling, but if you wait until the last beating process you have eliminated most of your motes, etc., that you want to take out, and are putting the oil on the cotton that is to go on through; and I think that the first beater will clean a little better without the oil. I do not think the oil is better in the earlier stages; you want the oil for the results it produces at the

card and later on."

It developed that most of the men present apply from 1/3 to 1/2 per cent of oil. A man asked whether the percentage should be changed for different lengths of cotton. Mr. Adams stated that he uses the same percentage on three different staples. The question of whether the cards might get sticky from the oil developed the fact that several of the men had experienced some of this trouble in the earlier stages of using oil—as a result of trying to put on too much oil—but that with the present-day percentages, no trouble is encountered in this respect.

W. L. Long asked what are the advantages of using oil. Mr. Dilling replied that "it keeps the mill much cleaner, and that enables you to make better work all of the way through, and you require less cleaning on all of the machines, and you have less slugs in the work." Mr. McLoud reported that he finds the use of the oil helps to hold the yarn on numbers better; that he ran a test through with a lot of oiled and a lot of unoiled cotton, and in the spinning room, on a windy day, the oiled stock held the numbers good, but the unoiled stock varied in weight considerably. He and Mr. Whitener both reported that they had demonstrated the value of oil in this respect by shutting the oil supply off temporarily and noting the effect on the numbers; that when the oil was restored the yarn stayed on number much better. Mr. Adams said "I find the use of oil keeps the mill quite a bit cleaner, especially in the card room, and keeps the number better, and also helps prevent static on the combers."

H. Gilmer Winget asked whether anyone had encountered objection from yarn finishers because of the presence of the oil. Mr. Dilling brought out that by the time the yarn is spun and twisted, it is difficult to determine its presence; that in the beginning, some finishers thought there would be objections to the oil in the yarn, but that they soon discovered it had no injurious effects. Mr. Grice said a mercerizer had told him that his tests showed there was nothing in the oil injurious to the mercerizing; that frankly, he had endeavored to find something wrong with oiled yarn, but had been unable to do so.

Next the relative merits of heavy, slow carding versus light, fast carding came up. Mr. Dilling pointed out that about 12 years ago this question was pretty thoroughly studied and that it had come up again. "None of us cards heavy like we used to," said John W. Long, "and we all prefer light fast carding, over slow heavy carding. You can get a cleaner web. I do not necessarily mean a light lap. There is not a great deal of difference between a light and heavy lap." As to card draft, he said, he had experimented from 90 to 160, and prefers a "medium" of 130 on 1¼ and 1⅛-inch cotton. "If I had to have a heavy production, I would prefer a light sliver and fast doffer," he said.

Heavy Slow Carding Vs. Light Fast Carding

"I am like Mr. Long, I would rather have a light sliver and fast doffer," said Mr. Williams. "I used to think just the other way around, but made a number of tests, on short draft and long, and came to the conclusion that about 120 is a mighty good draft, on 1 3/16-inch and 1¼-inch cotton." Mr. Dilling asked whether the same thing would hold true on shorter cotton, like 1-inch. No one present gave an opinion. Mr. Dilling said he had gotten good results with a card draft of 130 on 1¼-inch cotton, but that when he tried this on 1-inch cotton it would not work. He said it seemed that the longer the cotton, the longer you can draft it satisfactorily on a card, "but on short cotton you cannot successfully draft up as high as 130, 140 or 150."

Mr. Whitener reported trying drafts from 90 to 130, on 1 3/32-inch and 1 5/32-inch cotton, arriving at 120 as the best. W. L. Long reported a draft of 124 on American, and 140 on Egyptian; "we had to go up on the Egyptian because it is tougher."

Draft on Ribbon and Sliver Lap

The last two questions referred to ribbon and sliver lap machines, asking what is the best draft on these machines, and which should be heavier per yard, the sliver lap or the ribbon lap? Drafts of 1.80 on sliver lap, 3.00 on ribbon lap; 2.10 on sliver lap, 4.00 on ribbon lap; 1.25 on sliver lap, 3.00 on ribbon lap; were given.

As to whether the product of the sliver lap or the ribbon lap machine should be heavier in weight per yard, there was a divided opinion. A majority of those present indicated that they run the ribbon lap heavier, and the sliver lap lighter, but there were several who reported the opposite. It was suggested that tests on this be run and reported at the next meeting.

Feindel Heads Chemists

George P. Feindel, of Union Bleachery, Greenville, S. C., was elected chairman of the Piedmont Section of the American Association of Textile Chemists and Colorists at its annual meeting in Charlotte, N. C., October 21. Albert H. Grimshaw, professor of dyeing and chemistry, N. C. State College, was made vice-chairman; J. C. Robertson, R. & H. Chemical Co., Greenville, S. C., secretary; and Fred O. Tilson, Mathieson Alkali Works, Charlotte, treasurer.

George S. Harris, treasurer, Springs Mills, Lancaster, S. C., was the chief speaker at the banquet which constituted the meeting. F. W. Nuttall, of Pacific Mills, presented a paper on printing in South America. Arthur R. Thompson, retiring chairman, presided as toastmaster.

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TexSpray Outfit at Auburn

An installation for spraying oil on raw cotton in the beater box of a one-process Saco-Lowell picker has been completed by The Texas Company in the textile school at Alabama Polytechnic Institute, Auburn, Ala. There are 16 oil atomizer spray heads placed between the feed pedals and the top grid bar; the heads are equally spaced across the width of the interior of the machine, to insure an even distribution of the oil vapor through the cotton within the beater cage, and to permit all fibers to receive the oil treatment.

The amount of oil deposited on the fibers is determined by reading the graduations on a glass container; the amount can be altered as well. A quadruplex pump, driven by a sprocket and chain to eliminate slippage, is used to keep the flow of oil to the spray chamber at a uniform rate.

Gossett Explains Provisions for Registration of

Cotton-Textile Productive Equipment

THIS report of the plant extension committee of the Code Authority, of which Mr. Gossett is chairman, explains the requirements, and cites the advantages. The need for replacement, and improved equipment, will aid machinery builders. Group problems in the industry must be worked out . .

By B. B. Gossett

President, Chadwick-Hoskins Co.,

Vice-Pres., Gossett Mills, Inc.

WHEN the cotton-textile code was approved by the President it contained a significant clause with respect to the installation of additional productive machinery for cotton manufacturing. Unlike most sections of the code this clause originally was not mandatory. In order to make it effective, and have it possess the same force as other sections of the code, it was provided that initial steps should be taken by the code authority of our industry. The necessary initiative has now been exercised and a recommendation of the code authority to the administrator of the National Recovery Act, imposing certain restrictions on the installation of additional spindles and looms, has now been approved.

B. B. Gossett

The Institute furnished all mills subject to the cotton-textile code with a copy of this recommendation on September 15 and on October 2 formal notice was mailed all mills advising that the recommendation had been approved by the Administrator as of October 1. Therefore, the cotton-textile code in its present form, provides for the registration of all looms and spindles in place in cotton mills. It also requires that before additional looms and spindles can be installed, except for replacement or balancing purposes, application must be made to the Administrator for a certificate authorizing such installation.

While it is not news, I may remind you in passing that for many years there have been more spindles and looms in the industry than could be profitably employed. The number of spindles idle last year and the early part of this year amounted to 26.3 per cent of the total spindles in place, or a monthly average of over eight million idle spindles. Within the past five years there have at times been as many as twelve million idle spindles.

In the formulation of the cotton-textile code it was anticipated that many of these idle spindles would resume operation and give employment to many thousands of workers. These anticipations have been realized, employment under the code having increased to a very pronounced extent. Reports show that the number of employees now on mill payrolls is 140,000 in excess of last March. Nevertheless there are still many idle spindles. For instance, the latest figures from the Bureau of Census show that 4,900,000 spindles did not run at any time during the month of August.

In view of these facts, it is at once obvious that there is no need for expanding the industry's equipment in order to compensate for the reduction in the work week to 40 hours and the limitation of the running time of productive machinery to 80 hours, both of which are mandatory under the code. In imposing the limitation of 80 hours per week on productive machinery the National Recovery Administration recognized a deep-seated problem in our industry. It recognized that there is more equipment in existence than can be operated profitably. It realized that absence of any restriction under the code would leave the industry in the same chaotic condition (or even worse) that has existed for a number of years prior to the code. Natural impulses must be reckoned with. Any tendency of mills located in low-cost areas, or mills that had hitherto run two or more shifts to compensate for code restrictions by the purchase of additional machinery, should be effectively curbed. If the code placed no hindrance upon such installations it is easy to see that one of the most beneficial effects that the industry has anticipated from the cotton-textile code would be nullified. Indeed, in my opinion, the limitation of the hours of operation of productive machinery and the provision that no additional productive machinery can be installed except for replacement and balancing purposes, affords this industry more hope for its stabilization and for improvement in general employment conditions than all other provisions of the code combined.

But I do not think it can be assumed that the code as it now stands will be fully adequate to bring about stabilized conditions. There are groups in the industry wherein 80 hours for looms and spindles would afford too much production. These groups have the task of working out production schedules more appropriate to their particular situation, within the 80-hour maximum which the code imposes. Efforts in this direction would be seriously retarded if any tendency to increase the spindle and loom capacity of mills financially strong or well favored from the standpoint of location were not controlled.

This provision need not cause uneasiness on the part of machinery builders, as the code places no hindrance upon the installation of looms and spindles for replacement or for legitimate balancing purposes. Of course, there is no restriction whatever on preparatory machinery and other important equipment. The restriction applies only to spindles and looms.

In this connection, let me say to our friends, the machinery builders, that in making our recommendation, the committee was not unmindful of the important part that the capital goods industries must necessarily play in any plans for industrial recovery. While, until recently, Washington's efforts have been mainly directed toward regulating the consumer goods industries, still they have realized just as

our committee has not failed to realize, that unless the capital goods industries are permitted to enjoy their full share in the industrial recovery, that it cannot accomplish the purpose for which it was designed.

It should be remembered that decades of life and operation have taken their toll in efficiency of mill equipment. Then, in addition, there is the all-important question of new inventions and improvements that are rendering obsolete processes and methods as well as machinery previously considered efficient. Therefore, to my mind, if the operation of the code proves to be successful and mills are enabled to make a profit, there will be far more business in sight for machinery builders in replacements than if the industry continued to pursue the unprofitable path it has followed for the last several years.

Authority having now been granted by the Administrator to the cotton textile industry committee, the code authority for our industry, to function with respect to machinery limitation, this committee is now asking the industry to register with the Cotton-Textile Institute the number of spindles and looms in place or on order as of October 1, 1933. Furthermore, it has advised the mills that on and after November 1, 1933, all persons engaged in the cotton textile industry shall file a report monthly with the Cotton-Textile Institute, setting forth any installation of productive machinery, new or second-hand, and specifying the extent to which such installation is for the replacement of a similar number of units of productive machinery or for the purpose of bringing the operation of existing productive machinery into balance.

On and after October 1, 1933, applications should be filed with the Cotton-Textile Institute, for transmission through the cotton textile industry committee, to the Administrator for installation of additional productive machinery, except for replacement or legitimate balancing purposes. It will be the duty of the cotton textile industry committee to examine into such applications and ascertain the facts as to the circumstances of and reasons for such proposed installation. The committee will transmit the application to the Administrator with its recommendation as to whether such application should be granted or withheld.

Cotton Textile Manufacturers Testify on Compensatory Tax

AN APPEAL that the processing tax on cotton used for certain purposes be abated or that a compensatory tax be placed upon paper was made by representatives of the cotton-textile industry at a hearing on October 2 called by the Agricultural Adjustment Administration. The hearing was supplementary to one held July 31 and August 1.

Commodities considered at the hearing, held under Section 15 (d) of the Agricultural Adjustment Act included paper, jute and a group of hard fibers such as hemp, sisal, henequen, abaca, istle or ixtle, phormium, kipak, crin vegetal, sunn, cantala, piteria and coir or piassava.

The first session was confined to the subject of paper with George A. Sloan, president of the Cotton-Textile Institute, directing the discussion and introducing witnesses from the cotton industry who advocated that the cotton processing tax be abated or a compensatory tax be levied on paper.

The first witness for the cotton industry was Norman E. Elsas, of Atlanta, Ga., vice-president of the Fulton Bag and Cotton Mills, who advocated that the tax on cotton manufactured into bags be abated. He asserted that there was no formula whereby the range of competition could be established because the competitors of cotton bags ranged "from tobacco tins to flour sacks".

Mr. Elsas cited instances in which, he claimed, the processing tax on cotton had caused cancellation of orders for cotton bags, and containers manufactured from competing fibers had been substituted. He claimed that an increase on cost of 5,000 bags used for sacking meal was $14.90 of which $13 was processing tax and $1.90 increased labor costs under the textile code. He concluded his evidence with a plea that the processing tax be abated "and the economic equilibrium restored."

Substantiating Mr. Elsas' testimony was a statement from Cason J. Callaway, cotton-textile manufacturer from LaGrange, Ga., who said that he formerly manufactured his own cotton bagging for shipping purposes but that the processing tax had caused him to use burlap because of the lower cost.

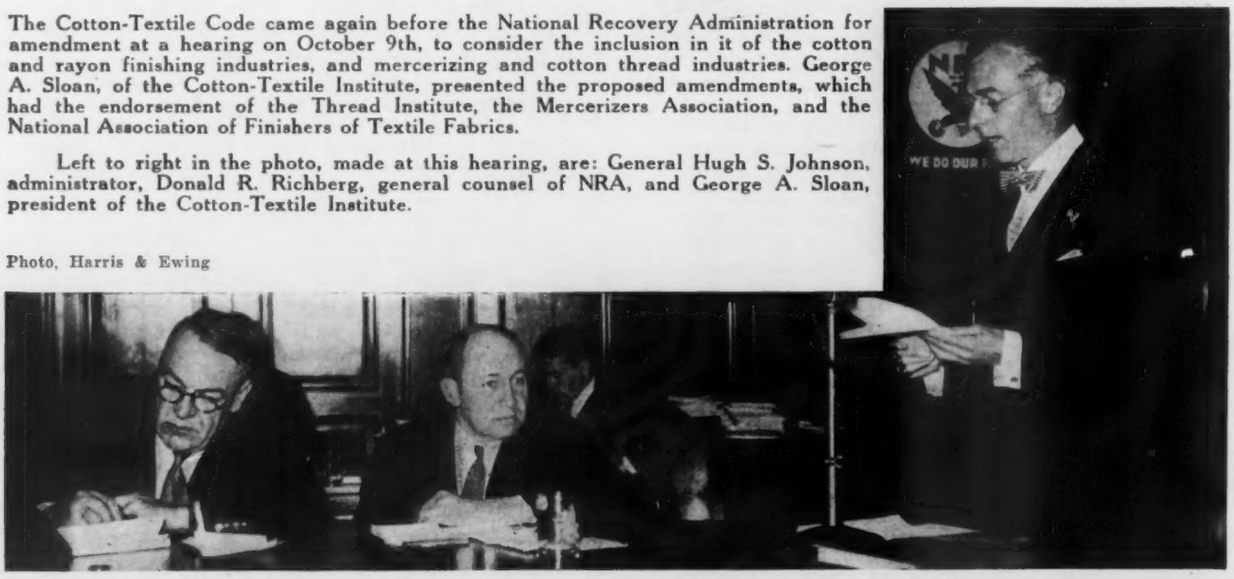
A third compensatory tax hearing, to consider rayon, other synthetic fibers, and silk, flax, wool, and mohair, in relation to the cotton processing tax, has been called for November 9th.

Hearing on Finishing, Mercerizing and Thread Amendments to Cotton-Textile Code

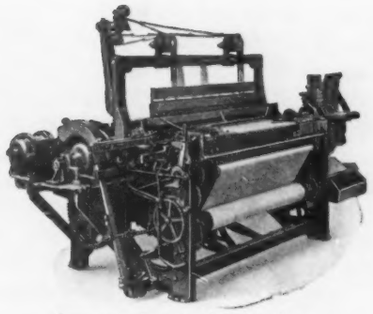
The Cotton-Textile Code came again before the National Recovery Administration for amendment at a hearing on October 9th, to consider the inclusion in it of the cotton and rayon finishing industries, and mercerizing and cotton thread industries. George A. Sloan, of the Cotton-Textile Institute, presented the proposed amendments, which had the endorsement of the Thread Institute, the Mercerizers Association, and the National Association of Finishers of Textile Fabrics.

Left to right in the photo, made at this hearing, are: General Hugh S. Johnson, administrator, Donald R. Richberg, general counsel of NRA, and George A. Sloan, president of the Cotton-Textile Institute.

Photo, Harris & Ewing



Practical Points on Weaving Rayon Goods



Courtesy, Draper Corporation

By Phil A. Ment

THIS resumes the series on handling rayon in a weaving mill, by Phil A. Ment. Previous installments, copies of which are available upon request, covered the preparation of the rayon for the weave room, including winding, twisting, warping, sizing, etc. One article was devoted to sizing.

Here the author gives practical suggestions as to the weaving operation, discussing, among other things, the let-off, take-up, shuttle check, etc. This article concludes the series . . . . . .

IN offering suggestions and results of practices to weavers of rayon fabrics the writer has tried to keep in mind that one man's meat is another man's poison. If the readers of this will accept the following lines in a spirit of tolerance, very good; and, if our opinions do not coincide with those of the other fellow, just say that the author is wrong and let us have your ideas and methods and experiences.

First, let us look on the loom as a very definite mechanical device capable of being used in units of from one to any number in turning out a uniform piece of cloth. Impossible, some of you will say, for so many weavers believe that each loom is distinctly individual and dependent upon the skill of the loom fixer for its product. And it is just this belief that causes so much shifting about of loom fixers in the weave rooms today, and so much turn-over in this class of help when individuals fail to produce after style or pattern changes on the looms.

There is no class of fabric that shows loom differences in such a pronounced manner as rayon goods. The face of these cloths will register variations in the amounts of pick, check, let-off and take-up, harness, setting and timing, and at numbers of other points. It is surprising just how much difference a very slight adjustment or variation will make. Naturally, it would seem the most logical thing to set all looms alike and keep them that way. In this lies our first point in processing for quality and uniformity.

As to bringing into play an organization that will function on a standard operation basis the following scheme has been found successful in a plant making high quality crepes, dress fabrics, voiles, and such, of all-rayon or rayos and pure silk mixtures.

Detail Card for Each Warp

Working directly under the weaving overseer and second hands are head loom fixers, one to each 80 looms. Under the head loom fixer is a regular loom fixer to every 40 looms. The regular fixers tie on warps, draw in broken ends and put the loom to weaving cloth, including in their work the starting of the warp stop motion. Each warp carries a printed card filled out by the designer's department. This card contains all the information pertinent to the *exact* manner in which the loom is to be set; such as shed opening, harness timing, whip-roll distances from floor and harnesses, type shuttle, and all other information that will tend to bring the loom product as close as possible to the original piece. It is the duty of the head loom fixer to set the loom up according to these specifications, checking each setting as it is made; and, when sufficient cloth of apparently satisfactory product is run over, to take a sample swatch to the design or pattern department for final checking before the loom is officially put to producing.

At first sight this procedure may seem cumbersome, but really it is generally a time saver. But, since quality is the main objective, the ultimate purpose is accomplished in a more efficient manner. These head loom fixers are picked men, chosen for their special abilities and not merely because they can keep a loom running continuously. The regular fixers can be more or less "run-of-the-mine" mechanics, and broken in to keep the machinery operating to the satisfaction of the head loom fixer. The number of looms under these men is an arbitrary figure and depends entirely upon the class of goods, type of loom, yardage on loom beams and general weave room conditions. It sometimes works out that the head loom fixer can also be used to inspect the looms in a routine manner, looking for worn parts, checking filling replenishments; and, above all, watching the routine loom fixing.

Looms properly started according to a fixed scheme turn out a more uniform product, are easier to operate, permit the maximum number of machines per weaver, and cost the least in upkeep over a reasonable period of time.

Now, a few hints on the details of starting, setting and operation.

Suppose, for instance, the warp has just run out. The loom should be thoroughly cleaned with dry rags, and all oil holes inspected. Oiling is best done at this time, while the least accessible points are handy. If practicable, the floor under and about the loom should be scrubbed or cleaned. It is not always good

policy to do scrubbing, particularly with hot water. if surrounding looms are threaded with viscose yarns. Excess water on floors may cause enough rise in humidity to affect the running yarn. All nuts should be tightened, and all lost motion removed. Crank, cam, and rocker shaft bearings should be inspected, particularly; and a reed put under the reed cap to inspect for proper lay alignment. Any doubtful or worn parts should be replaced, with special care to the fit of the parts.

The loom having been checked once, the warp is tied in, run over, stop motions connected and otherwise made ready for the head loom fixer. As to his procedure there is no set rule, so it is best to take up the several points as they come to mind and elaborate in the most advantageous manner.

Let-Off

Of the several types of let-off mechanism in use, those dependent upon frictional action are most familiar to the writer and from his own observation seem to be in most general use on rayon goods. Let it be distinctly understood that there is no attempt made to belittle or overlook mechanical let-off motions, whatever, they are in use in numbers of mills and religiously sworn by; these remarks are offered almost entirely from personal experience, and are to be accepted as such.

The simplest form of friction let-off consists of sash cord rope or chain fixed to the loom or floor and passing around the beam frictional drum one or more times to a direct acting weighted lever. Generally, two of these are used, one on each end of the beam. This motion is varied by compounding the beam lever, which sometimes proves an advantage over the simpler form.

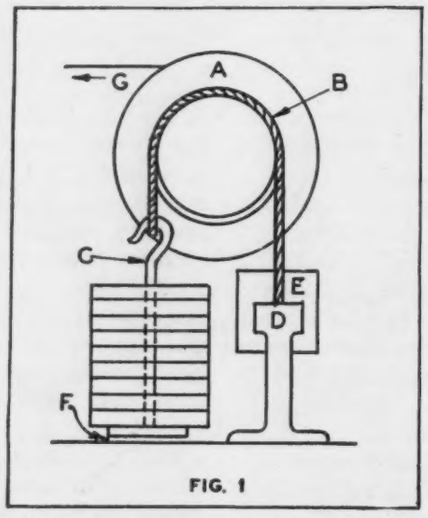


FIG. 1

Another variation of friction let-off is shown at Fig. 1. On one end of the beam is a hanger carrying plate weights. The friction rope or chain connects this hanger to the weight lever. The amount of weight on the lever and the amount of weight on the hanger is so adjusted that the hanger is barely off the floor; in a sort of balanced position, so to speak. The other end of the beam uses a simple lever and fixed rope arrangement as first described. In Fig. 1, *A* is the loom beam, *B* is the friction drum, *C* is the hanger and plate weights; *D* is the weight lever stand, and *E* the weight on the lever. The line of warp is shown at *G*, and *F* indicates the position of the hanger and weights off the floor. This type of friction set-up is an old all-silk rig, but has been found very satisfactory on crepes, taffeta, satins, twills, etc., of high sley and pick.

The friction element may be rope of the sash cord type, flat link chain, bale strapping faced with leather or any other such substance. Graphite is generally superior to oil or grease as a lubricant on the drum. One very good combination is effected by polishing the friction surface of the drum on a lathe and using a dry chain wound around the smooth surface. A light dusting of the drum with graphite is usually sufficient to lubricate this set-up.

It is absolutely necessary, in securing a smooth piece of rayon cloth, to maintain a smooth even let-off of the warp; regardless of whether this is accomplished by an all-friction device, mechanical means, or a combination of both. It has been the writer's good fortune to see mechanical let-off motions in successful operation on twill and satin constructions and he has noted very commendable results. Whether or not these motions are universally adaptable lies not in his power to state, and further information must be sought from another source.

Take-Up

Some of the older type looms were built with the take-up roll in the low position. After a pick-out, or in making a joining, weavers found it difficult to properly adjust the fell of the cloth to its previous position. Either a thick or thin place would likely result and have to be woven out. The latest tendency seems to be toward bringing the nip of the cloth as close as possible to the fell, by bringing the take-up roll to a higher position.

For take-up roll covering, crepe rubber appears to be the best all-around material. Fine grain sandpaper may be used, also corduroy or plush.

In inspecting the gearing of the take-up, loom fixers should look for worn gears and worn studs, take out all lost motion or binding, see that gears turn freely and properly in both directions and clean all thread waste or choke from between gears and studs. Also, the take-up motion should be inspected for the ease with which the take-up roll is moved. Too often the presser roll is screwed so tightly against the take-up roll that the gearing is thrown out of proper set and joinings are difficult to properly make.

Harness Settings

Too many fixers have the habit of setting harness by leveling the tops of the frames. This method does not always level the sheds, and care must be taken to bring the warp to an even sheet regardless of the position of frames or ribs. The face of rayon cloths will reflect very slight differences in the amounts of lift given to warp ends.

Another point in regard to harness setting lies in the amount of clearance given the passing shuttle. The shuttle should not strike the top shed at any point in its passage along the lay. In setting the shed opening it is a good plan to place the shuttle in the shed, with the harness in the wide open position, and adjust the shed to clear the shuttle at all

points at least ⅛-inch to ¼-inch. Nor should the shuttle ride the bottom shed too much.

The bottom shed should be set to barely miss the lay, and the lay should be covered with felt, corduroy, or plush in order to give a cushion to the threads.

In timing the pick to the shed opening it is best to see that the shuttle does not have to push in before the full shed is made. Shuttles of the silk type, with front walls lower than the back, are a great help in regulating this; as well as permitting the minimum lift of the harness.

In timing the beat-up to the pick loom fixers are confronted with the problem of avoiding "chattery" cloth. This defect takes the form of short raised lines, usually ½-inch to 1-inch, running fillingwise of the cloth; and is usually caused by pushing in the last pick either too far in advance or too far behind the crossing of the harness. A good setting is to level the head and harness, loosen the crank-shaft, move the lay up almost to the fell of the cloth and tighten up in this position. "Chattery" cloth is nothing more than overbeating and shows that warp ends set up an uneven resistance to the filling. As a rule, this defect is confined to plain weaves of high or fairly high pick; and more tolerance of setting may be given to satins, twills and weaves of fancy interlacing.

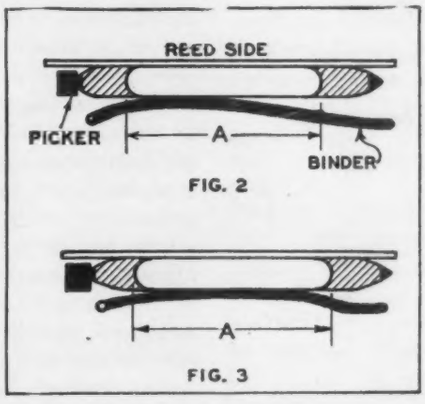


FIG. 2

FIG. 3

Once the proper harness setting and pick timing is decided upon, all other looms should be set to this same position and the guide card mentioned before should carry the information necessary to guide the head loom fixer in his final adjustment.

It may be well to note here that unless each warp is given a uniform sizing, the same harness and pick timing will not give like results. If, all other things being equal, different appearances result from the same shed timings it is well to look to the amount of size put on the yarn, and the character of the size mix. The less flexible of sized warps show more tendency to "chatter".

The Lay

It should go without saying that all lays should be lined and leveled, using the same type reed as will be in use on the warp going on the loom. Every effort must be put forth to give the shuttle a true course to pass in. Beside the injury done to the warp yarn by a crooked running shuttle, there is the additional power necessary to send the shuttle home, wear and tear on the shuttle, and improper boxing that leaves the filling in the shed under varying tensions. Also, the reed suffers from improper contact with the shuttle; and, if dents are spread or pushed into closer density, warpwise streaks will show in the cloth.

Few loom fixers give much thought to checking a shuttle, other than simply overcoming weak picks with resulting slamming of the loom. In Fig. 2 a crude sketch of a shuttle, held in the box by a steel binder, is shown. This is the manner in which most fixers, if not carefully watched, will check a shuttle by taking advantage of the flexible portion of the shuttle shown by *A*. The binder is bent with a sharp curve that exerts pressure just inside the solid end of the shuttle to prevent rebounding. Generally, the fit is tight since the contact surface between the shuttle and binder is so very short.

Shuttle Check

It is better loom fixing if the binder is given a gradual bend that develops into a straight line that lies flat against the side of the shuttle through the distance *A* and curves slowly away, as shown in Fig. 3. A gradual check such as this, aided by check straps and similar devices, is much more efficient and easier to keep under control. On entering the box the shuttle is thus acted upon gradually and not suddenly stopped.

It is surprising just how much effect proper shuttle check has upon the cloth. The face is much smoother, selvages are neater and it is very easy to set the filling at the required tension. In addition, the filling fork can be better kept in operation without the attendant small loops that crop up occasionally from changes in the filling tension.

The same principles underlying checking with metal binders also apply to setting the wood binders on looms so equipped. Try to work toward a slow gentle checking with as little binding as possible, rather than by forcing the shuttle into a tight box.

It is also very good practice to have the loom pick as lightly as possible. The cone pick loom offers more possibility of this than does the bat-wing pick looms. On open weaves of the voile type, light picking is very advantageous as the shock to the loom during picking is less likely to cause the beam to jump and streak the cloth fillingwise.

Shuttles

It has already been mentioned that the silk shuttle, which is usually lower and narrower than the cotton type shuttles, is much more preferable for general use on rayon goods. The smaller construction permits less shed opening, which is very desirable.

The yarn may be drawn from the shuttle in a variety of ways to meet changing conditions. If filling feeler motions are used it is good practice to take the yarn from top of the shuttle by means of a porcelain eye placed ahead of the shuttle throat. Or the shuttle may be constructed with a low thread groove. By these the feeler tip is better kept out of possible contact with the free picks, as the feeler tip enters the shuttle.

Additional porcelain eyes placed in the throat and in the front side of the shuttle offer, when used in conjunction with a wire loop conductor tension, a wide range of threadings.

In lining the shuttle to run rayon filling, whether

low twist or crepe yarns, it is not the best practice to depend too much on the shuttle lining for friction control. Soft fur lining is generally preferred, and no more should be used than is necessary to prevent "ballooning" in the shuttle, sloughing off of the cops, and slackness between the throat eye and the point at which the yarn leaves the cop.

There are a few more points to be brought out, in closing, and these will be run through briefly.

Before entering the stop motion the warp should be split with a rod or rods. If a single rod is used, a "sticker" string or light "sticker" rod should be rigged back of the split rod to catch ends sticking together. The sticker string, or rod, is connected to the stop motion and stops the loom before the tight end begins to show in the cloth.

If in doubt as to how to run the face of the cloth, whether up or down, be guided by the number of harness that are up most of the time. Keep the greater number of harness on the top shed, thus keeping shuttle contact with the warp to a minimum, since the shuttle crosses the lay on the least number of ends.

There may be points the writer has overlooked, but at present these are the ones most vividly in mind. Good reeds are, of course, absolutely necessary and it is very poor economy to buy any but the best. Quality does not come cheaply, but it can be made to come just as cheaply as the next man's by exercising continual thought and care along systematic lines. The more detail and the more information that can be put on the head loom fixer's guide card, the easier will be the quality control from the cloth room. Each of the above points and many others, may easily be incorporated in the fixer's guide card and every mill can work out its system along most suitable lines.

Details of Code for Textile Machinery Manufacturers.

Mill men will be interested in the code adopted for manufacturers of textile machinery, which was approved by President Roosevelt on October 3, and made effective October 16. It was proposed by the National Association of Textile Machinery Manufacturers, representing employers of over 91 per cent of the workers in the industry.

Those covered by the code include concerns manufacturing for sale complete machines and parts thereof and accessories therefor used in textile establishmests for the actual manufacture of yarn and/or woven fabrics or for finishing or dyeing, whether as a final process or as a part of a larger and further process.

A labor provision similar to Section 7(a) of the NIRA is included. Minors under 16 years are prohibited, except where a state law provides a higher minimum; no one between 16 and 18 years of age shall work in any metal or woodworking or other moving machinery, or on heat process.

Accounting, clerical and office employees are to be paid not less than $14.00 per week. All other employees—except outside helpers and shippers south of the Potomac River, learners during their initial 90 days, apprentices and watchmen, are paid at not less than 35 cents per hour, regardless of whether on time or piece work basis. An equitable adjustment of wages above the minimums provides that, "so far as may be equitable", the differentials previously existing between the wage rates paid to skilled workers and those paid to unskilled labor shall be at least maintained. The minimum for those classes excepted from the 35 cents minimum "shall not be less than the hourly rate which prevailed for the same class of labor on July 15, 1929, and in any event not less than 30 cents per hour.

All labor—except executives, supervisory staff receiving more than $35.00 per week, and outside salesmen—are limited to 40 hours per week. Except that in times of concentrated demand on any division which places an unusual and temporary burden, an employee of such division may work not more than 48 hours per week in not more than 8 weeks of any six months' period, provided that the total hours of work shall not average more than 40 hours per week in any six months' period. Repair and maintenance crews, engineers, and electricians may work a tolerance of 10 per cent in excess of the maximum hours, with time and a half paid for the excess hours. No employee may be regularly employed more than six days in any seven-day period.

As to trade practice, machinery and parts manufacturers are prohibited from selling on contracts made subsequent to the effective day, on any terms resulting in the customer paying less than the seller's cost, as determined in accordance with standard accounting practice. Agents and/or importers of foreign machinery sold in this country, in competition with domestic-made equipment, are subject to the provisions of trade practice and administration in the code.

Secret rebates of all kinds are absolutely prohibited. All machinery shall be sold f.o.b. factory.

The purchase price shall be payable not later than 30 days from date of shipment. The initial cash payment shall be not less than 25 per cent (for deferred payments) to be paid within 30 days of shipment; the balance to be paid within two years following the average date of shipments. The rate of interest on these payments shall not be less than 5 per cent. Stocks or bonds of the purchaser shall not be accepted as payment, in whole or in part, of the purchase price. No machinery shall be sold on terms other than cash, unless the title to or a lien on such machinery is retained by the seller until the full purchase price is paid.

The members of the industry shall be organized under divisional committees working under the Code Authority, the members of the Authority to be selected, nine in number, under approval of the Administrator. The Authority may have also three members, without vote, representing government, appointed by the President. With the unanimous approval of his divisional committee, a manufacturer may sell on deferred payments on terms other than those described.

Durham Meeting Discusses Carding and Spinning Maintenance

Reported by Robert W. Philip

AN INTERESTING discussion of practical card room problems, with a brief session on spinning, constituted the program of the Eastern Carolina Division, Southern Textile Association, meeting at the community building of Erwin Cotton Mills Co., West Durham, N. C., on Saturday, October 28. The meeting was for one session, on Saturday morning. Due to excellent planning and leadership, the meeting was a valuable one, and the attendance was probably the largest ever drawn by this division.

M. R. Vick, overseer of carding, Rosemary Mfg. Co., Rosemary, N. C., led the discussion on carding which occupied most of the session. E. M. Holt, assistant manager, Erwin Cotton Mills No. 1, 4 and 6, chairman of the division, opened the meeting. P. B. Parks, manager of these mills, made a short address of welcome. During the morning, Kemp P. Lewis, president of the Erwin mills, made a brief, helpful talk, stressing the value of the association work under the conditions imposed by the new deal; he declared there will be no place in the new deal for the inefficiently operated mill, that those which do not keep up-to-date in personnel and equipment are committing industrial suicide.

Overhauling Picker Room Machinery

In opening the practical discussion, Mr. Vick submitted a question as to how often, on an 80-hour basis, should lappers be overhauled—all calenders and fluted rolls be removed, gears inspected, etc. He said that on a 50-hour basis, he had done this every six months, but felt that under 80 hours a week operation, this should be done more often. The picker is a heavy machine, he pointed out, and the bearings are apt to wear on account of dirt, etc., around the machine, resulting in too much lost motion. Culver Batson, manager, Consolidated Textile Corp., Lynchburg, Va., agreed that on the new schedule of hours more frequent inspection was necessary. He pointed out many mills had changed to one-process picking, which did not leave any spare machines for use while cleaning and overhauling. He felt that the pickers should be inspected thoroughly (not entirely overhauled, of course) at least once a week.

E. M. Holt brought out that "we have one-process pickers which are synchronized, and with this arrangement it is absolutely necessary that the machines be kept in synchronism, with all cone belts tight so there will be no undue slippage. To begin with, we record our lap weights, and when a machine begins to lose too many laps, we stop that machine and go over the evener gearing, cones, cone belts, and everything else affecting the synchronizing operation. When this is done regularly, with one-process machines, the average mill will find they have enough pickers and can keep far enough ahead on the laps so they can stop off one unit and go over it thoroughly—taking out all calender rolls, screens, etc., renewing leathers around the screens, taking out gauge boxes and putting in felt lining if necessary; the setting of the beaters should be checked. If this is done every six months, well and good, but if not, then I believe every nine to twelve months will be okeh—that is, if you keep the picker up to operation all the time. * * * It takes time to record the lap weights, but by doing so the overseer can go past a picker and find out at a glance whether it is putting out good work, by the number of rejected laps."

In connection with picker upkeep, M. R. Harden, superintendent, Erwin Mill No. 4, brought out that the average overseer neglects giving the proper attention to the points on a Kirschner beater; "they will check their blade beaters, but are prone to neglect the Kirschner. Keeping a Kirschner beater in proper shape is as important to my mind as keeping the card clothing sharp," he said.

E. M. HOLT, of the Erwin Cotton Mills Co., West Durham, N. C., who is chairman of the Eastern Carolina Division of the Southern Textile Association . .

Mr. Batson explained his system of having the pickers cleaned out, and the hoods raised, at noontime and stopping time, and the overseer makes the rounds and inspects the machines, checking the pins on the Kirschners, the blades, the leathers, etc. W. T. Byrd, overseer carding, Erwin Cotton Mills, described a systematic overhauling schedule which is done twice a year, including taking out and cleaning calender rolls, gauge boxes, cleaning bearings, taking out feed rolls and cleaning bearings, inspecting leathers and replacing where needed; re-setting and cleaning grid bars and repairing when necessary; cleaning all miscellaneous bearings; re-setting gearings, and inspecting ring-oiled and ball-bearings; putting grease on the teeth of the calender gearing; repairing any parts before replacing. He pointed out that ball-bearings should be inspected regularly, and not left to themselves, that they should be cleaned and washed out regularly. He also sees that cones are in good condition, all aprons in good shape, as well as all bearings; checking to see

that the lap have the right amount of weight on them; that the knock-off motion is in good shape, and the lap pins in good condition. He has a regular schedule of these items prepared and provides the overhauler with a copy, because, he said, while we know to do all of these things, we are likely to forget some of the small, important ones. He said he cleans mote knives twice a day on a 16-hour schedule.

How Sharp is a "Sharp" Beater?

D. F. Lanier, superintendent, Oxford (N. C.) Cotton Mills, raised the point of "how sharp" a beater should be, for good results. He said that he had not had a beater ground in several years, and that his breaking strength had improved, indicating that not having the beater "too sharp" produced this improvement. E. M. Holt expressed the decided opinion that a beater should be "sharp" and not "dull." "I agree," he said, "that a blade beater is a terrible thing to have to deal with, but it is something that so far seems necessary, though some mills have gone away from it to a drum beater. But I believe that when you hit cotton with a dull beater, you are kidding yourself. Hit it with a good clean blow. Then if you are hitting it enough to lower the breaking strength, set a little further away or slow down your beater. But when you hit it a good clean blow with a sharp blade, it is better than with a round one just dragging it off of the feed roll.' Mr. Harden agreed, adding that when a blade beater wears, it wears unevenly; that if it wears in the center, the cotton will not be evenly distributed on the screens. Mr. Byrd also agreed.

M. R. Harden

As to a Kirschner beater, Mr. Lanier said he had even cut out part of the frame of the machine to move the beater away, and had set it up close, and had been unable to note any effect on strength from the Kirschner beater setting. Mr. Vick brought out that when his one-process machines were installed, he noticed the young fellow set the beaters about ½-inch away, but that he later had moved them some closer and felt he got better results. He added that, "I like a good sharp beater even if I have to cut my beater speed down. I believe when we sharpen our beaters in our machine shop we do not get exactly the same angle as when they were originally put in; the angle is more acute, and we sometimes get them a little bit too sharp." Mr. Batson said he sharpens his to knock off the wire edge.

Replacing Card Clothing Fillet

The next discussion was with reference to replacing doffer and cylinder fillet on cards, the question asking "how long should a doffer and cylinder fillet last with 1,000 pounds weekly production, with proper care," Mr. Vick also asked, "Do you overhaul a card every time you grind it?" He pointed out that cards that have run 30 years or so have worn the brass journals; that if new clothing is put on, and the journals are worn 10 or 12/1000-inch, and the flats are set to a 10/1000 or 9/1000 gauge at the front, when the card is started the worn journals allow the cylinder to be raised and damage the ends of the flats. J. V. McCombs, superintendent, Randolph Mills, Franklinville, N. C., reported he had encountered that trouble on cards 21 years old, and was replacing journals on over a third of his cards. Mr. Vick and Mr. Mullen explained their cards had run for 30 years without journal replacement, and that they intended looking into the matter. J. A. Simpson, of Franklinville, pointed out that bearing wear could come largely from using too light an oil, and that this would get on the ends of the flats and make them slick. Mr. Vick agreed that oil would run out of a worn bearing easier; that the older cards are, the more oil comes out on the flats. Mr. McCombs, discussing the lubrication of the card cylinder, declared that the bearing should last indefinitely, but that most of the trouble has resulted from the use of improper oil at this point; that "it has only been in the last 15 or 20 years that we have learned a great deal about oil. I believe that with the proper oil, a card bearing might last 50 years, but if you use all kinds of oil in it you can just expect it to wear out." Mr. Vick believed that in past years this condition had come about through a lack of system on the part of the overseers.

M. R. Vick

Replacing Flat Chains

There was next a discussion as to replacing the chains in top flats. It was practically agreed that it is unwise to remove more than two flats, before replacing the chains. Mr. Holt said chains should be renewed when the carrier wheel sprocket is replaced. Mr. Lanier said the flats will last as long as the chains, and vice versa. J. W. Thompson, overseer carding at Oxford, said "I had lots of trouble with the flats bruising up at each end. We put in new flats and new chains and new sprockets and had our flats clothed—the sprockets had been running 15 to 20 years—and got rid of the trouble."

Mr. Parish, of Selma, asked whether, when new chains are put on one card, it is possible for it to take out the same amount of strips as the card next to it running with worn chains and some of the flats taken out. Mr. Holmes explained this could not be done, because, with the two cards running at the same speed, one with 110 flats and the other with 108, there would be an equivalent difference in the amount of stripping done. Mr. Harden stated they keep a periodic check on their strips and flyings, and he rarely sees any two cards that take out the same amount of strips, regardless of conditions. Mr. Batson suggested that "we are inclined to let things like this run a little hap-hazardly, and we ought to try to run the cards so all of the flat strips run the same." He referred to the variation in card sliver resulting from uneven strippings from different cards. James E. Sumpter, of Lynchburg, brought out that the matter might be taken back to the pickers, and a daily weighing made to determine the yard-for-yard variation in picker laps, instead of taking just the total weight of the laps. J. W. Thompson suggested that one thing that would help in getting the right amount of strips is proper attention to the stripper plate, which, he said, "has a tendency to govern the weight of the strips. Sometimes you have a stripper plate that is rough at the point where it goes up under the flat. Take that plate off and dress

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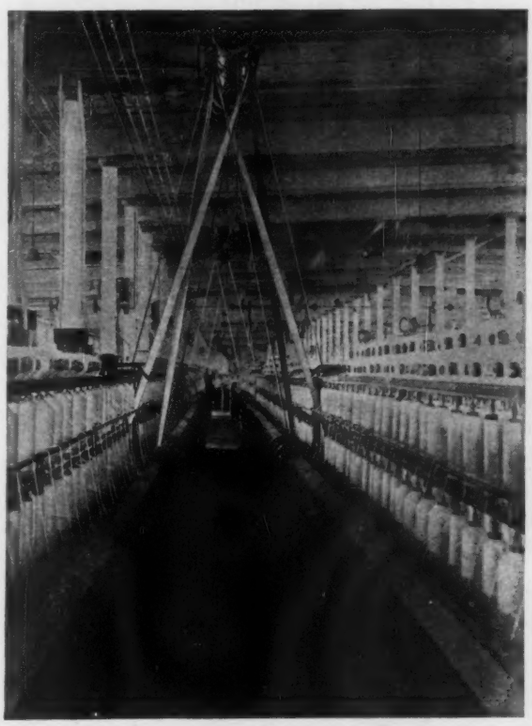

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it so it will not hold the cotton. That will help. Maybe you are too close, or maybe too far away. Find the right setting. Sometimes you will find a card taking out fairly good strips on each end, but in the middle they are thin. If you will take that stripper plate off and put it on a straight-edge and get it absolutely straight, and then put it back on with the right setting, the strips will be pretty nearly what you want." Mr. Harden declared it would be difficult to get the same strips off of each card, but that by keeping a periodic weighing of the flat strips from each card, and noting them, any local condition on any one card could be traced and the trouble investigated.

In connection with card upkeep, Mr. Vick expressed himself as to the importance of a good card grinder, saying he had never understood why a good card grinder was not worth as much or more to a mill than a loom fixer; that a loom fixer deals only with mechanical problems, but that a card grinder who tends to his job must know the mechanical side and also deal with the product being run. He said, "in my whole mill experience I have never seen more than four *real* card grinders", and said he had often wished some good carder would start a school for training card grinders. J. V. McCombs declared that he had never paid card grinders less than loom fixers. He told of going to a mill in 1918 where the management was preparing to install 80 sets of flats, and that by his getting a couple of good card grinders and paying them well, he had improved the product of the card to a point wheer the new flats were not needed.

Mr. Vick again brought up his question of how long card cylinder and doffer fillet should last, but it seemed generally agreed that this depended definitely upon the character of grinding, the grade of cotton, etc. Mr. Simpson said "It is not necessary to take off a flat until the wire flies out or it wears down below the knee"—with the proper grinding.

The matter of heavy and light grinding was brought up, Mr. Vick declaring that "I think light card grinding is all right if you can get to them every 10 or 15 days".

Several men did agree that with the proper care, fillet should last satisfactorily for 15 to 20 years.

Turning Over Spinning Rings

M. R. Harden took charge of the meeting to conduct a short discussion on spinning subjects. John Rose and J. E. Vernon, of Henderson, N. C., brought up the subject of what to do with rings when the spinning frame is overhauled. Several men agreed that if the rings are producing good work, they should not be turned at the overhauling. There was a divided opinion on the point of whether rings should ever be turned over. Mr. McCombs said he had done this once and would not do it again. Mr. Hughes said he turns them, putting them back in the same holders, with good results. L. B. Creech of Selma said he turned 10 or 11 frames of rings recently, on 26s yarn, and got good results. J. A. Simpson said some men, in turning rings, break off the travelers and then are not able to tell which flange is which, and that he recommends leaving the travelers on while burnishing, so there will be no mix-up as to which flange should be put back in first; that, with proper attention, rings can be turned and about one-half the service secured on the second flange. W. V. Byers, superintendent, Erwin Mill No. 2, said they had turned rings on 20,000 spindles on coarse work, 8s to 10s warp, after the rings had run for ten or fifteen years, and that they got just as good service after turning them as before; that, after turning, his end breakage did not go above 17 or 20 ends down per thousand spindle hours, which was just as good as he had previously done. H. H. Colbert, overseer spinning, Consolidated Textile Corp., Lynchburg, said they have 31,000 spindles on 21½s warp, installed in 1901, and they have not put in any new rings, turning the rings as it became necessary. On 30,000 spindles on 14s to 45s filling, older than the warp, they have not installed any new rings.

George F. Brietz, superintendent, Selma (N. C.) Cotton Mills brought up the question of re-grinding worn whirls on band-driving spinning. Mr. Farris reported Erwin's experience, stating that they had gotten good results from having this done. He said the band consumption was less after the whirls were ground to the same diameter. It was pointed out that care must be exercised, that on a whirl that is badly worn, there is danger of cutting in too far; that it is essential to have a man caliper each whirl as it comes from the shop and reject any that are not properly ground. On this, their first experience, Mr. Farris said they rejected about 15 per cent of the re-ground whirls, the shops replacing these for the mill. At the same time the whirls were ground, he said, the bottom of the spindle was also re-pointed; the cost of this was approximately 7½ cents against a cost of 28 cents for a new spindle. Mr. Brietz reported a cost of 4 cents for re-grinding a whirl without re-pointing the spindle.

George Gilliam, of Sterling Cotton Mills, Franklinton, N. C., reported that he had exchanged bolsters from one side of the frame to the other, with good results, for the purpose of getting away from the worn bolster. There was a difference of opinion expressed as to whether this would eliminate the trouble, some men believing that the spindle would still wabble even though the pull was from the other side. Some felt that reversing the base at the same time would help. An effort was made to develop information as to the effect on the wear of the bolster in going to large package spinning; no one present reported, but Mr. Cates brought out that naturally, the longer the stroke, the greater the wear will be on the bolster on the spinning.

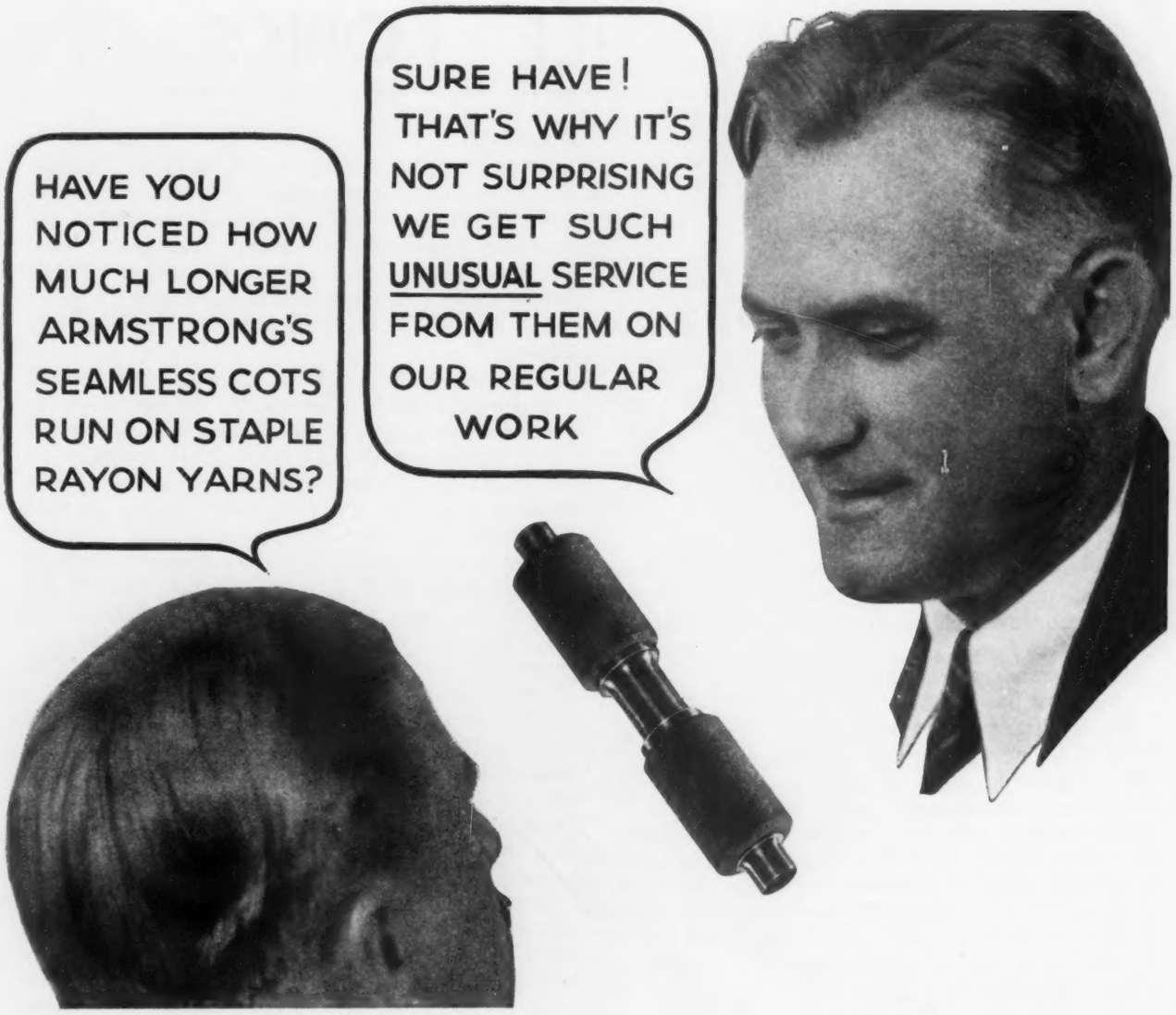
A member asked for experiences with a new domestic carborundum for covering card grinding rolls. Mr. McCombs said he had tried it out, that a No. 30 carborundum corresponded to the familiar No. 40 fillet; he said the new grinding material was entirely satisfactory but he had experienced trouble with the foundation breaking and allowing the emery to come loose.

Floor Stock Tax and Processing Tax Re-Instated on Stocks in Process

Since the issuance of Treasury Decision 4392, cancelling the floor stock tax on stocks of cotton in process on August 1, as reported on page 40 of the October issue of COTTON, the Treasury Department issued, on November 2, Treasury Decision 4403, which rescinds T.D. 4392 and restores a tax on stock in process in an altered form. The original bill applied the floor stock tax of 4.4184 cents per pound on stock in process on August 1, and allowed for a refund of the tax paid by converting the tax paid on all cotton in process at the end of the taxing period.

When T.D. 4392 revoked the tax on stock in process, a number of cotton goods customers took the position that mills should not be permitted to pass on the amount of the floor stock tax on goods made from stock in process on August 1. Had this claim been allowed, there would have been great difficulty in collecting the amount of the tax on goods delivered after the end of the taxing period, but made of cotton in process at the end of the period on which the tax would have been paid.

In restoring the tax on stock in process August 1, and, presumably, the refund of this tax to mills at the end of the taxing period, T.D. 4403 defines "stock in process" as stock up to but not including yarn, and applies the processing tax of 4.2 cents per pound on this stock; yarn in any form and all products thereof are subject to the floor stock tax of 4.4184 cents per pound.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CURRENT TEXTILE TOPICS. . . .

Talk of the Month

The General Situation in Textile Markets

SEVERAL forms of uncertainty have beset the cotton industry in its progress through the fall, affecting the situation from the raw-material, labor, marketing, machinery and other angles; but most of all perhaps was the uncertainty lying outside the textile field as a drawback. One of the earliest possibilities suggested for industry under the NRA program was a more orderly spread of marketing and textiles quickly were adapted to their code in a way which was encouraging for better spread of work and manufacture. The wool branch has gone far to indicate a new day in production, with reduction of rush seasons and severe gaps between relieved by restricted schedules and consequent necessity for buyers to purchase further ahead, although one cannot overlook that the movement is favored by a rising trend of prices for which allowance must be made.

But wool has had a unique course through a fall otherwise disturbed by a sharp general reaction which followed the summer rush of industry at large. This reaction was aggravated by the long series of strikes; true, it is admitted, having to do with other than the cotton industry, yet carrying an indirect influence over this branch. Aside from this influence and the troublesome financial situation, there might have been signs in cotton as in wool of a spreading out of manufacture and demand. The industry had some part in the September reaction, but showed a definite tendency toward renewed activity well before the end of the month. Moreover, cotton consumption in September was the best for that month since the depression started, notwithstanding the sharp rise last fall.

As indicated from the start of the Government "partnership" with industry, meantime, problems have arisen under new guise and the NRA faces both manufacturing and labor pressure. Thus early in the new order of things for the cotton industry, one unit has besought a relaxing of the restrictions; that is, the establishment of a six-hour day and five-day week, but allowing four shifts and a restoration of that evil of night operation so long a subject of agitation. The very suggestion aroused a storm of protest, as well it might, and if the industry is to retain its own sovereignty, so to speak, it must ward against efforts toward anything destructive of public or Administration confidence in its program.

Talk of socialism as an advancing force in this country has been rife. Whatever one's attitude or belief, significant, in this connection, are the words of an Administration official—Donald Richberg, general counsel of the NRA: "Unless industry is sufficiently socialized by its private owners and managers so that great essential industries are operated under public obligations appropriate to the public interest in them, the advance of political control over private industry is inevitable."

If such words are a warning to industry, there is encouragement in the statement of Recovery Administrator Hugh S. Johnson, at the convention of the American Federation of Labor: "The plain, stark truth is that you cannot tolerate the strikes. Public opinion is the essential power in this country. In the end it will break down and destroy every subversive influence."

Cropping out of the same convention were words from Daniel J. Tobin, representing the teamsters, indicating a recognition similar to that of leaders in the cotton industry years ago that private groups must act to put their houses in order, or expect outside forces to compel it. Mr. Tobin said: "Unless we have the courage to settle such disputes as this (between certain groups mentioned), the Government will do it for us." The issue is outside the cotton industry and labor has not been a recent problem in textiles except silk. Yet the subject is timely, as indicating the obligation and intention of the Government toward labor as toward industry.

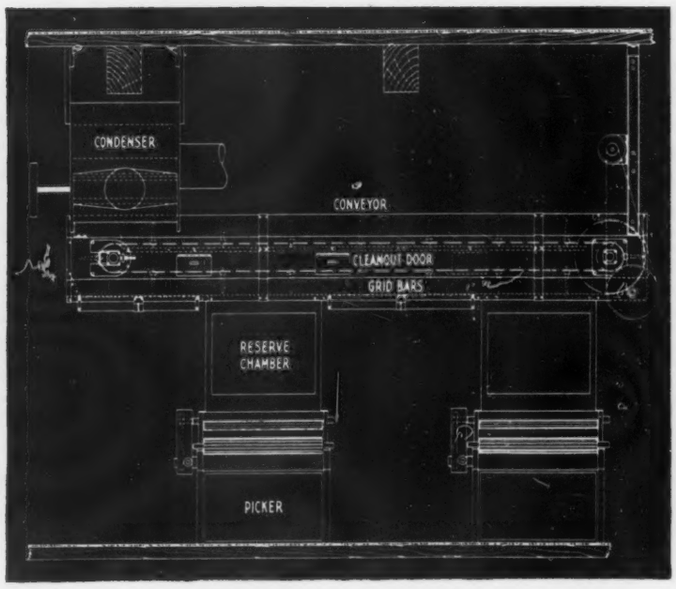
Raw cotton came into attention as a paramount factor in the goods outlook, as a result of the Government move for a loan of 10 cents a pound to the farmers and the announcement of the formation of the Commodity Corporation to effect the plan. Coming at a time when the new-crop movement is usually a bearish factor, the loan plan was immediately seen as a price stabilizing force through practically setting a minimum on cotton that was still owned by farmers. By reason of other cotton still subject to the free marketing conditions, the price level was affected somewhat by the severe reactionary tendency in speculative markets the middle of October. Cotton, however, showed an undercurrent of resistance not seen in wheat and other commodities.

New England Mill Situation

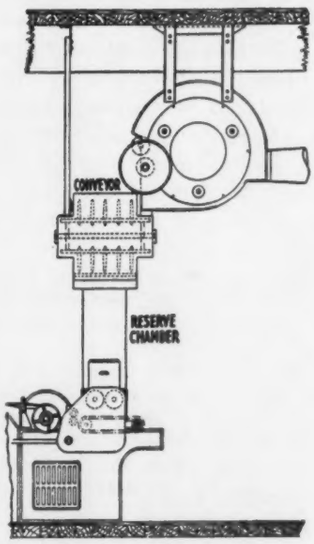
CONSERVATIVE-MINDEDNESS of New England does not obscure the fact that the initial three months of the cotton code under the Nira have brought the expected encouragement to the mills of this section. A resolution of the National Association of Cotton Manufacturers, at its annual fall meeting in Boston, in a short sentence speaks eloquently of the change while sounding a warning. The statement, evoked by the suggestion of a 30-hour week for workers but allowing 24 hours a day for the machines through four shifts of six hours, was addressed to the Nira. It said, in part:

"The effectuation of Code No. 1 under the National Industrial Recovery Act marked the emergence of the cotton-textile industry from an economic chaos . . . The vital principle in the code was the limitation of the hours which machines in the cotton-textile industry may operate . . . . The National Association of Cotton Manufacturers therefore resolves that it is urgently necessary that applications for removal of restrictions in machine hours be not granted by the Administration."

New uniform—pressure feed gives



Greater Uniformity A-C-R-O-S-S the lap!



SIDE ELEVATION

YARD-FOR-YARD uniformity of picker laps has been achieved to a remarkable degree in recent years. Uniformity across the width of the lap, however, is every bit as important because, as the lap is drawn out, unevenness across the width develops into uneven sliver just as does unevenness along the length. • The AUTOMATIC CONTROL FEEDING SYSTEM sets a new standard of selvage-to-selvage uniformity. The stock is kept at a constant level and constant pressure in reserve chambers which replace, on each picker, the customary feeders. In each chamber is a delicately-balanced feeler connected to a mercoid switch. These control the supply of stock in each chamber. • Additional cleaning of the cotton takes place as it passes over vibrator grid bars in the conveyor, removing seed and leaf particles. • Due to the large and constant supply of stock in each chamber, there is fed down into the feed rolls a uniform supply across the entire width of the machine, resulting in a marked improvement in selvage-to-selvage evenness. • The above arrangement permits present breaker feeders to be used as blending feeders, which every mill requires to cope successfully with today's manufacturing conditions. • •

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Cotton mills of this region have not only increased production through the first months of the new regime, but look to a further progress as the general economic situation improves. Another setback just as plans have been started by many mills to accommodate themselves to the new conditions would be discouraging, to say the least, hence the protest against any proposal for a reversion to longer machine hours. In fact, in the words of the National Association president, Ernest N. Hood, "it is not to be anticipated that there is or will be enough demand for cotton goods to consume the production of two shifts in all the mills in all branches of the industry." He cites Massachusetts as a case, because it still is restricted somewhat beyond other States.

In the first stages of adjustment, the mills of New England have made notable recovery from the depression. Mill activity became first-page news in a Fall River paper as printcloth orders for occupation of looms from the first of October to the end of the year were reported. The news was reminiscent of the day when quotations on printcloths at Fall River were a market barometer. It had been a long day since sales of cotton cloths in this center were turned down because the mills were bespoken as far as they cared to take the business.

Significant of the opening of mills and extension of operations, in various cases to second shifts which in periods of seasonal activity at least are calculated to be run, has been the return to such places as Fall River and New Bedford of skilled textile workers who drifted away in the time of severe depression. As stated by Mr. Hood, the restrictions still imposed by Massachusetts laws make two full 40-hour shifts impossible, despite the relief from the six-o'clock law on women working, but in times of good business a second shift can be run at a moderately shorter period. A number of plants have been put on such a schedule and there is hope that another legislature will put the State even in competition.

Advices from New Bedford indicate the passing of a gloomy period in which the dominating textile note was liquidation of mills. Not many months ago hundreds of stockholders were eager to get what they could for their cotton mill properties and save themselves from further losses. Now there has developed a movement toward renovating plants which were long idle, in response to the demand created by the recovery. As an example, a report the first of October said the best news of the week was the decision of directors of the Kilburn Mill to get ready to start the No. 2 factory. In Fall River, the Luther has resumed in part and the American Printing has resumed a double shift, while the Sagamore has been equipping with automatic looms.

Maine mills are actively competing with other New England cotton plants, while recent tidings from Rhode Island were that most of the factories were on full time, with operations on the two 40-hour shifts. While active, the Rhode Island mills were keeping well to orders and no surplus stock was evident.

Encouraging as a sign of change was the announcement that the Appleton Company, organized 105 years ago in Lowell, had resumed dividends on its preferred stock after a lapse of more than five years. The new attitude of stockholders toward their mill equities has been shown in firm prices for Fall River plants. Offerings at low prices have ceased to large extent.

Municipal authorities, incidentally, have been giving aid and comfort to the industry by lower valuations in taxing the plants. It has been recognized that idle machinery could be saved to the city by lower per-spindle valuation when a high rate might lead to dismantling. The idea of a flexible valuation has had a practical application and the city stands to profit therefrom by a reasonably higher rate in times of spindle activity.

National Association Opposes Change in Machine Hour Operation as Established in Textile Code

VIGOROUS objection to any flexibility in the hours of operation as prescribed by the cotton-textile code was voiced by the National Association of Cotton Manufacturers, in a resolution adopted at their annual convention in Boston, Mass., on October 4th. The resolution, pointing out that limitation of machine operations must be continued, and that the 80-hour restriction prevents the return of the "graveyard" shift, was designed particularly to oppose efforts of gauze manufacturers and other marginal companies who are seeking a modification of the hours regulations to permit four daily shifts of six hours, with the operatives receiving for six hours the wage previously paid for eight hours.

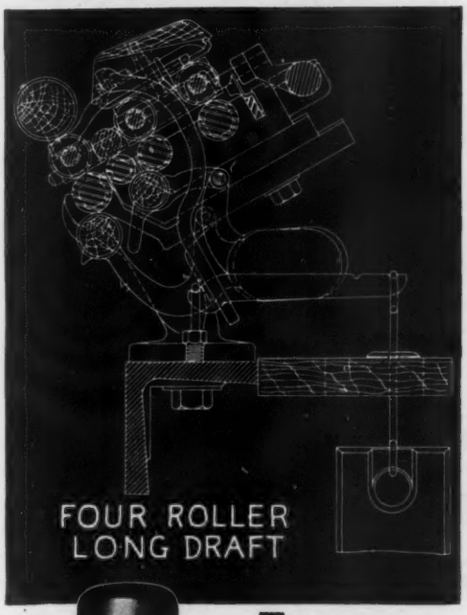
The intent of the resolution is in line with expressions which have been made by The Cotton-Textile Institute, and other representative agencies of the industry.

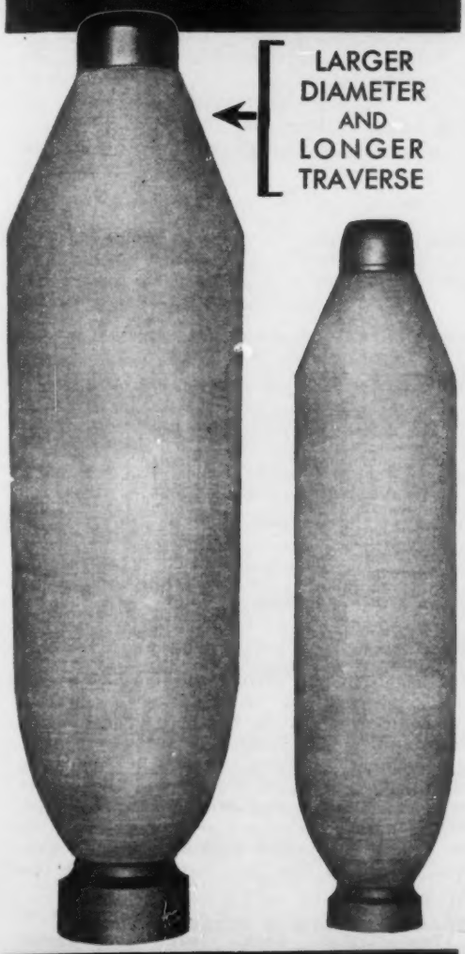
Ernest N. Hood, treasurer of the Pequot Mills, Salem, Mass., was re-elected president of the association in its business session. In his address as president, Mr. Hood recounted the development of the cotton-textile code under the NRA, and made some interesting observations as to its effects. He said in part:

Production Control Not Established

"While under the provisions of the code, machinery hours are limited to 80 per week, and we are permitted to regulate production, may I call your attention to the fact that actual control of production as applied to any particular line of cotton textiles is not yet a fact. It appears that the industry at large has accepted the idea that two 40-hour shifts mean normal production, but this is not so. While some divisions of cotton manufacturing, such as print cloths and narrow sheetings, may be able to run 80 hours per week regularly, there are other sections which may find it difficult to operate consistently even 40 hours per week. * * * Statistics of the industry as a whole indicate that normal demand can only be met by operating all the spindles in place an average of over 60 hours per week throughout the year, but this average of 60 hours per week of course would not apply to all branches of cotton manufacturing.

"Production can be satisfactorily controlled only through group action. The industry is in a position to govern itself through groups as the statistical set-up under the cotton code provides the necessary data. While this complete machinery has not yet been set up, it is apparent that the various groups within the in-





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The H & B Four Roller System of Long Draft makes a better yarn. This system allows for the natural positioning of the fibres. The bite of the second roll is not carried so near to the front roll as are the belts in other systems, so that "plucking" is prevented. Also the longer fibres are drafted to form the core of the yarn, where they have less tendency to break up into shorter fibres.

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MODEL B SPINNING FRAME

dustry will be able to function in an effective way, with the full authority of the administrator co-operating to compel the compliance of any recalcitrant minority. * * * It should be a comparatively simple matter for a group such as wide sheetings to decide upon a uniform production schedule, applicable alike to all members of this group, which would insure a balancing of production and consumption. Once such a schedule had been adopted by a percentage of the group, and approved by the administrator, it would become law and be binding upon all mills turning out such a product. Other groups could organize in a similar fashion until the production of pretty much all textile products were brought into balance with consumption."

Mr. Hood discussed the tariff situation, declaring that the protection afforded American manufacturers and workmen in the last tariff act, regarded as adequate when passed, has lost much of its effectiveness; that a complete embargo against such low wage countries as Japan will be necessary if the cotton-textile industry of the United States is to survive, under the increased costs resulting from federal legislation.

The Industrial Relations Board

Dr. Robert W. Bruere, chairman of the National Cotton Textile Industrial Relations Board, under which all complaints with reference to working conditions are being handled under the code, appeared on the program and discussed the evolution and development of his board, and the setting up of the state relations boards under the national board. He stressed the possibilities and necessity of co-operation all along the line. He pointed out that the majority of the complaints were based on misunderstanding or incomplete understanding of the code; that he personally had gone to New Orleans to interpret the code to the employer and employee at the Lane Cotton Mills there, which was involved in a strike, and that when the purpose and procedure of the code was clearly and fully explained, the parties quickly came to an agreement which resulted in resumption of operations at the mill.

Frank I. Neild, of the Neild Mfg. Co., New Bedford, Mass., as a member of the cotton textile industry committee, described the work of that committee in the development of the cotton-textile code, and at the hearings. Daniel S. Murph, chief of the cotton processing and marketing section of the Agricultural Adjustment Administration, discussed the events leading up to the legislation creating the AAA, and explained the operation of the processing tax as applied to cotton. Alston H. Garside, economist of the New York Cotton Exchange, New York City, discussed the world cotton situation, statistically.

Weston Howland, treasurer of the Warwick Mills, West Warwick, R. I., and associated with the Maine mills of New England Industries, Inc., was re-elected senior vice-president of the association; Dexter Stevens, assistant to the president, Utica & Mohawk Cotton Co., was re-elected junior vice-president. Joel M. Barnes, of the Barnes Textile Service, Boston; C. F. Broughton, treasurer, Wamsutta Mills, New Bedford; F. C. Dumaine, Jr., of Boston; David C. Duncan, of Providence; and Ralph C. Perkins, of Taunton, Mass., were named as members of the board of directors for three years.

COMMENT ON THE COTTON MARKET

New Orleans, October 14, 1933.

ONE month ago the trend of the cotton market was upward as result of higher sterling exchange, inflation talk and an optimistic feeling in speculative circles, values having risen sharply, but the weather inland remained generally favorable for the growing crop, there developed less prospects for currency inflation, indications were for a larger crop, there was extensive hedging, sterling was on the down grade again, and liquidation set in. As a result values receded sharply, only to bulge again in consequence of the government's cotton loan proposal. The advance failed to hold, however, as much cotton was sold in the interior and at the ports, some on call, and there was much hedging. Then came the government's crop forecast and ginning report, as of October 1st, released on 9th inst., which was much larger than generally expected, and while the cotton loan and acreage plan served to sustain temporarily, sterling, grain and stocks weakened eventually, and cotton sympathized by declining sharply.

GOVERNMENT REPORT

	This year	Last year
Estimated acreage left for harvest..	30,036,000	35,939,000 (final)
Condition	66.7	54.2
Indicated yield per acre, pounds ...	205.3	173.3 (final)
Indicated production, bales of 500 lbs. gross wt.	12,885,000	13,002,000 (final)
Ginned to October 1st	5,851,415	4,835,990

Since October 1st the weather inland continued generally favorable for the growing crop, and the impression prevails that a further addition to the crop is possible, especially in parts of the Southwest and the north-central portion of the belt.

SEASON'S INDICATED WORLD'S SUPPLY OF AMERICAN LINT COTTON

Bales—	This season	Last season
World's carry-over, August 1st (Hester)	11,339,000	12,911,000
Indicated crop, if ginnings	12,589,000	12,710,000
Total, about	23,928,000	25,621,000

As regards foreign cotton crops, they were recently privately estimated at about 11,963,000 bales, or nearly 2,000,000 larger than last year's production. The world's carry-over of foreign, however, was estimated at 3,555,000 bales versus 4,184,000 last year and the seven year average of 4,353,000.

As to consumption, Garside estimated the world's consumption of American during August at approximately 1,266,000 bales versus 1,067,000 in August last season, and of all kinds at about 2,179,000 against 1,819,000 for August of last year.

BRITISH BOARD OF TRADE REPORT FOR SEPTEMBER

Year—	1933	1932	1931
Exports of yarn, pounds	12,000,000	10,000,000	9,000,000
Exports of cloth, yards	163,000,000	177,000,000	128,000,000

CENSUS REPORT

United States—Bales—	This season	Last season
Consumption of lint, September	499,486	492,742
Consumption of linters, September	76,451	65,487
Consumption, including linters, September	575,937	558,229
Consumption of lint, two months	1,088,056	897,239
Consumption of linters, two months	159,722	113,936
Consumption, including linters, two months	1,247,778	1,011,175
Mill stocks September 30th	1,160,457	1,084,549
Stocks in public storage and warehouses, Sept. 30th	7,374,556	7,997,797
Stocks in mills, public storage and warehouses, Sept. 30th	8,535,013	9,082,346
Active spindles during September	26,002,148	23,835,106
Active spindles during August	25,884,704	22,045,060

Recently there has been less activity in the goods markets, with values tending lower in response to the late decline in the value of raw cotton, but there continues a good demand for spots in the South where there is said to be a holding movement developing, especially in Texas, which is reflected in smaller sales of late, and the export movement from the United States is encouraging, since August 1st. 1,760,000 bales versus 1,581,000 to corresponding date last season. The same applies to world spinners takings of American, which, to the 13th inst. were 2,852,000 bales against 2,574,000.

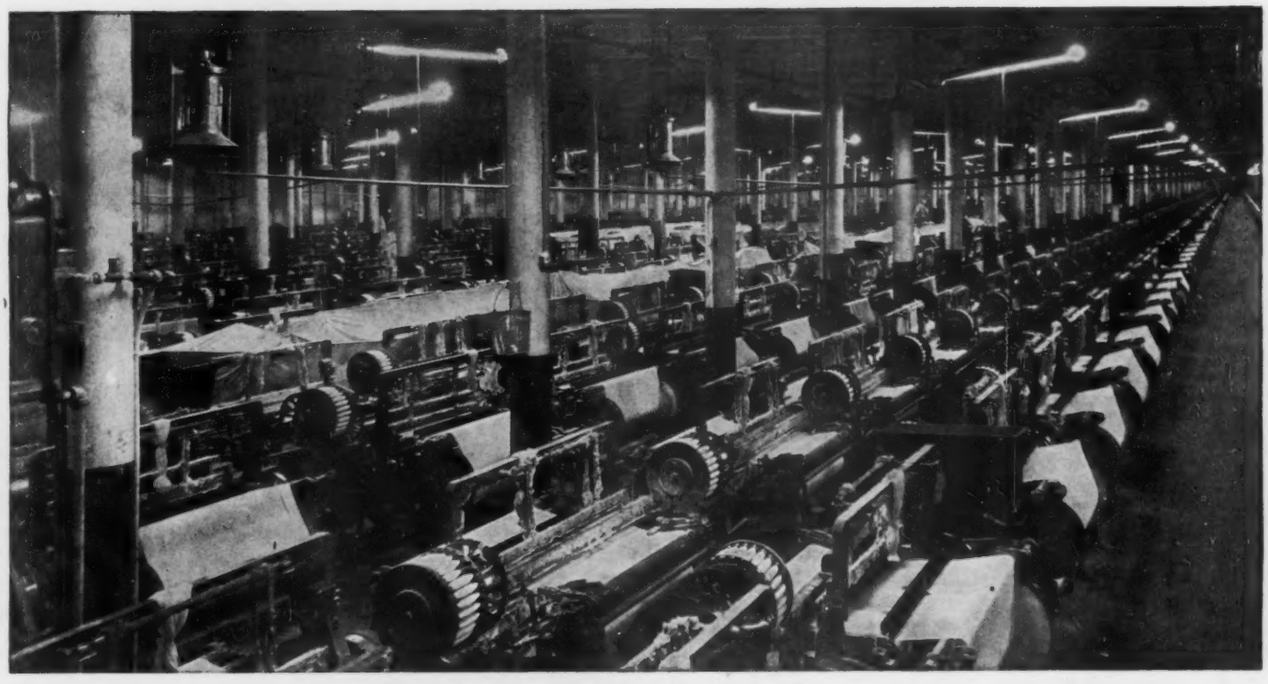
TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1933	1932	1931	1930	Normal
September	2.57	5.19	0.68	1.90	2.87
Nov. to Sept., inclusive	26.00	34.96	25.49	23.56	28.18

While the season's world's supply of American is about 23,928,000 bales versus 25,621,000 last season, if this season's world's consumption of American is as large as last season's—14,424,000 bales of lint—the world's carry-over of American at the close of July next year would probably be about 9,504,000 bales versus 11,339,000 at the close of July this year and the record of 12,911,000 at the close of July last year. Progress, therefore, appears being made in reducing the surplus, which seems to be the aim of the government.

It follows, therefore, that the matter of next year's

PROPER weave shed lighting does more than pay its way . . .



Cooper Hewitt mercury-vapor lamps provide ideal illumination for the constant inspection, and quick, accurate action needed to keep looms running smoothly. They deliver the proper quantity and quality of light at the working level where it is really needed. Their light is free from glare, and virtually shadowless.

Weavers find that Cooper Hewitts make it easier to keep a constant check on heddles and drop-eyes, help them spot thin places, prevent mis-draws and correct over-shot and under-shot picks, thus reducing the number of cuts rejected as seconds.

Cooper Hewitt lighting makes it possible for loom-fixers to work without flashlights or droplights. They find both hands free to do a quicker, better job—even on adjustments usually difficult to see such as setting filling forks, adjusting warp stop motion or correcting jumping shuttles.

There is scarcely a Cooper Hewitt mercury-vapor lamp now in use that did not have to prove its value in dollars and cents. And where they have been tried, the number of these lamps has grown from an experimental handful to several hundred in a single mill. A test in your own weave shed can do more than anything else to prove how profitable Cooper Hewitt lighting can be for you. General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC
VAPOR LAMP COMPANY

568 Copr. 1933, General Electric Vapor Lamp Co.

acreage and crop becomes important as a factor in the market, even at this early date. It seems that the government is planning for an acreage of about 25,000,000 acres for 1934, and for a crop of only about 9,000,000 bales, providing farmers co-operate, but climatic conditions and activity of insects, as was the case this year, may alter such calculations.

At any rate, reducing the surplus materially is evidently the government's objective in the interest of higher prices and the return of prosperity. Of course no one knows anything at this time, except the plan of the government as regards next year's acreage and next year's crop, because, as stated previously, much will likely depend upon climatic conditions, developments as to insects, and the attitude of the farmer. Nevertheless, the outline of what is being done by the government for success of the National Recovery Act, for credit expansion, and for release of frozen deposits in closed banks, and contemplated for 1934, as regards next year's acreage and crop, seems worthy of serious consideration.

What the Southern Mills Are Doing..

American Enka Corp., Asheville, N. C., is building an addition to the plant increasing the floor space by approximately 75,000 square feet, and including the installation of additional machinery as an addition to the power house, including a new 800-hp. boiler.

A. B. Beasley, of Randleman, and E. W. Freeze, of High Point, have bought at auction Mill No. 1, Deep River Mills, Randleman, N. C. The property consists of the Plaidville and Marietta knitting units, and 86 houses. Robert L. McElroy, of Charlottesville, Va., and Robert L. Huffines, of Clayton, N. C., and associates, purchased Mill No. 2 and 60 houses.

The Hawkinsville Spinning and Weaving Mill, Hawkinsville, Ga., have been organized and have petitioned for charter. Timothy Mooney and Norah H. Mooney are the organizers. The company will probably operate the former Hawkinsville Cotton Mills.

An addition, 70 x 81 feet, has been made at the Rhodes-Rhyne Mill, Lincolnton, N. C. The second floor will house new looms for weaving bedspreads, and the first floor is to be used as a finishing department.

Everrite Hosiery Mills of New York City have purchased the Jonesboro Hosiery Mills, Jonesboro, Ga., and will place it in operation with B. L. Babb as superintendent.

Sapona Cotton Mills, Cedar Falls, N. C., recently acquired the Cox power plant, dam and lake, four miles south of Randleman, N. C., and acquired a fourth interest in a proposed power development on Deep River.

A Pomona turbine pump for a deep well system has been purchased by Georgia Kincaid Mills, Griffin, Ga., from McBurney Stoker and Equipment Co., Atlanta, Ga.

Lowell Bleachery South, Griffin, Ga., recently installed yarn dyeing equipment purchased from the Gaston County Dyeing Machine Co., Stanley, N. C.

Cliffside Mills, Cliffside, N. C., have replaced their old type water wheels with modern water turbines and vertical generators.

Baker-Mebane Hosiery Mills,, Mebane, N. C., recently placed order with Hemphill Co. for 40 Banner wrap stripe knitting machines.

McLaurin Hosiery Mills, Inc., Asheboro, N. C., were recently organized by McLaurin Cranford, D. B. McCrary and C. C. Cranford, to take over the assets of Keystone Hosiery Mills, of that place.

Timely News Items With a Textile Slant . . . .

Standard-Coosa-Thatcher Announces Thread Offices

Standard-Coosa-Thatcher Co., Chattanooga, Tenn., has announced the names of the managers of the sales offices of the division handling their new thread lines for garment and shoe trades, as follows: Boston, Mass., W. L. Fabyan; Rochester, N. Y., R. A. Kelly; St. Louis, Mo., R. A. Nelson; and Chicago, Ill., M. A. Henderson.

For many years the company has been spinning fine Egyptian thread yarns for the large converters, operating 137,000 spindles in five mills, and producing, when necessary, 40,000 pounds of thread daily. The 51 years of experience of this organization is utilized in the production of thread of uniform quality, it is pointed out, which is insured by the selection of highest grade cotton; and of uniform strength and size, insured by constant analysis of the finished yarn; and in prompt deliveries, insured by open mill stock of demand items.

The foreign department of the com- at their plant in Paisley, Scotland, and their offices in Manchester, England. Eadie Bros. are owners of the patents pany is already organized and functioning in the Argentine, Brazil, and Mexico.

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Sanders Represents Chicago Rawhide

The Chicago Rawhide Mfg. Co., 1267 Elston Ave., Wicker Park Station, Chicago, Ill., announces that M. C. Sanders, formerly president of the Greenville Belting Co., has joined J. C. Duckworth in representing the Chicago concern in the southern territory, with offices in Greenville, S. C. The company's products include leather belting, all types of textile and mill strapping, rawhide gears and pinions, and other special mechanical leather products.

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Brown on Foreign Trip

Stuart F. Brown, treasurer of the Whitinsville Spinning Ring Co., Whitinsville, Mass.—accompanied by Mrs. Brown—sailed from New York on October 14 for a series of conferences with the officials of Eadie Bros. Ltd., under which Whitinsville Spinning Ring Co. are American licensees to manufacture the Eadie automatic oil-lubricated ring for cotton, silk and rayon twisters.

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Research for Profits

For textile profits under N.R.A. the October issue of Textile Research, official publication of U. S. Institute for Textile Research, Inc., states that "the new scientific and economic textile knowledge that has been developed during recent years must be applied, and there must be adequate research to develop new scientific and economic knowledge. Few industries have done less than the textile industry in the utilization of scientific research, and few industries, therefore, can expect to profit to the same degree from the results of properly directed and adequately financed research."

In the same number are the following reports of Textile Foundation researches: Microbiology of Textile Fibres. Part I. Bryce Prindle; The Spectrophotometric Analysis of Dyed Materials. Part I. O. W. Pineo; The Disposal and Recovery of Textile Wastes. Part I. M. S. Campbell. The Compressometer, an instrument developed at the U. S. Bureau of Standards for evaluating the thickness, compressibility and compressional resilience of textiles, is described by Dr. H. F. Schiefer. In addition there are fifteen pages of abstracts of new textile research developments throughout the world.

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FOR speed—quality and evenness of stitch—ease, quietness and versatility of operation — low maintenance cost and longevity, the Willcox & Gibbs High-Speed Lockstitch is the perfect sewing machine.

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NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

Patent Issued on Dobby Drive

According to Paul B. Eaton, patent attorney, Charlotte, N. C., the Southern Silk Mills, Greensboro, N. C., recently obtained a patent on a dobby drive. This drive has a vertically disposed member with a transverse slot near the lower end, and an elliptical gear has a stud loosely mounted in the slot; the elliptical gear is driven by an eccentric gear. The upper end of the vertically disposed member has a transverse slot therein in which a stud extending from the rocker arm is slidably mounted.

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Patent on Speeder Stop Motion

W. W. Tripp, Mebane, N. C., was recently granted a patent for a stop motion means for speeders, etc., according to Paul B. Eaton, patent attorney, Charlotte, N. C. It has a gear wheel ter the oscillating shaft has oscillated carriage lifter shaft, and separately movable means pivoted on the same center as the gear wheel and engageable by the gear wheel for moving the knock-off latch to stop the machine after the oscillating shaft has oscillated a given number of times. It automatically re-sets itself after stopping the machine.

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Catalog on Wire Fence

Stewart Iron Works Co., Cincinnati, Ohio, has just issued a new catalog covering the company's chain link wire fence. The booklet shows illustrations of the various types of chain link wire fences and gates manufactured by the company, as installed in various industries, and other applications, and gives detailed specifications of these products.

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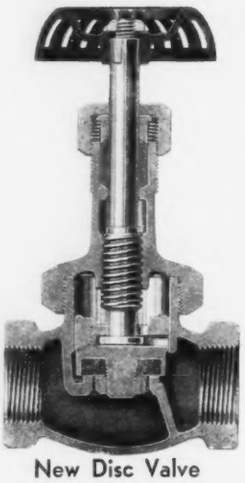
Chain Catalog

Diamond Chain & Mfg. Co., Indianapolis, has issued Catalog No. 583 covering the company's chains and sprockets. The booklet contains 96 pages with complete information on where to use the chain, how to select proper sizes and sprockets, calculation formulae, etc.; complete data on chains of various pitches, single and multiple strand, and sprocket data for all chain pitches. A section is devoted to special chains with side lugs and extended pins for conveying systems, and on chains of special materials, such as stainless steel, bronze, aluminum, Monel metal, etc.

Non-Metallic Disc Valve

The Lunkenheimer Co., Cincinnati, Ohio, has announced a non-metallic disc bronze valve suitable for 150-pound steam pressure and 300-pound gas-liquid pressure. It has a deep non-heat malleable iron hand-wheel with easy grip, it is pointed out; the stuffing box is extra deep and holds a generous supply of packing. Bronze gland in all sizes has a hexagon head to facilitate removal. The stem is made of rolled bronze and long threads are fully engaged with bonnet thread when the valve is closed. The shoulder above the stem thread seats tightly against the bottom of the stuffing box, it is pointed out. The one-piece bronze bonnet screws over the sturdy body neck and the flat face bonnet joint is easy to clean. The disc holder is of the slip-on type—a turn or two of the handwheel before removing the bonnet prevents the disc holder from dropping off. These bronze valves are regularly available in several designs—globe, angular, horizontal and angle check, spring check for compressor service, and quick operating.



New Disc Valve

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Photronic (photo-electric) Kit

Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark, N. J., has announced a new Photronic control kit, designed especially for those engineers and manufacturers who prefer to do their own experimenting with photo-electric control for mechanical equipment, operations and for processes of various kinds. The kit contains all the equipment necessary for the engineer to start immediate experiments, together with diagrams of connections. The equipment may be used as a smoke detector, burglar alarm, turbidity detector, door opener, counter for all classes of service, safety device on machines, etc.

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Carbanthrene Printing Powders

National Aniline & Chemical Co., 40 Rector St., New York City, have announced a complete line of vat printing powders, known as Carbanthrene printing powders, which, it is explained, are instantly dispersable and can be stirred directly into the "printing gum," requiring no "pasting up" with water or other solvents. "Because of their finely divided state and the action which follows while powders disperse in the printing gum," it is explained, "an extremely homogeneous and non-specking paste is obtained. As the powders remain unchanged indefinitely instead of drying out, settling, caking on container sides or freezing during the winter months, these difficulties are eliminated."

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Sewing Machine Catalog

Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City, is distributing a new condensed catalog of sewing machines, No. 28. It shows illustrations of all the company's well known line of equipment most in demand, together with brief descriptive information concerning the various types of machines. It contains 32 pages and is prepared in a convenient size.

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New Kier Equipment

The textile school at Clemson College, S. C., has added to its Rodney Hunt kier a triple flow circulating system with a multi-tabular heater, made by the R. & H. Chemicals Department of E. I. duPont de Nemours & Co. The students of the textile chemistry and dyeing division will use this new equipment in experimental work in peroxide bleaching.

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Control Catalog

A new catalog covering the Copes line of flow, level and pressure controls has been issued by the Northern Equipment Co., Erie, Pa.

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New Coupling Bulletin

"Farrell Gearflex Couplings" is the title of a new bulletin, No. 437, describing the flexible couplings manufactured by the Farrel-Birmingham Co., 437 Vulcan St., Buffalo, N. Y. The bulletin contains illustrations, diagrams and tables of ratings, dimensions, weights and list prices, as well as descriptive matter, etc.

Herrick Joins Johnson Bronze

Edward D. Herrick, formerly chief engineer of the Lycoming Manufacturing Company, builders of automotive, marine and aeroplane motors, has become affiliated with the Johnson Bronze Company of New Castle, Pa., as vice-president in charge of sales. Mr. Herrick is one of the outstanding automotive engineers in the industry and brings extensive experience and assistance to the Johnson Bronze Company in the management of its large and expanding business in the manufacture of solid bronze, graphite lined, bronze backed babbitt lined and steel backed babbitt lined bearings for all industry.

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Carbic Color & Chemical Office Now in Charlotte

Carbic Color & Chemical Co., Inc., has announced the removal of its Greensboro, N. C., office to Room 1303, First National Bank Bldg., Charlotte, N. C., and the appointment of John L. McKee as the company's southern representative, succeeding C. E. Bishop.

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PUBLISHER'S STATEMENT

of the ownership, management, circulation, etc., required by the act of Congress of August 24, 1912, of COTTON, published monthly at Dalton, Ga., for October 1st, 1933.

State of Georgia, County of Fulton.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared W. J. Rooke who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philip, Atlanta, Ga.; Business Manager, W. J. Rooke, Atlanta, Ga.

2. That the owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; W. R. C. Smith, Atlanta, Ga; W. S. Cushion, Cleveland, Ohio; O. A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; H. H. Kelley, Willoughby, Ohio; W. J. Rooke, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; P. D. Hammett, Chicago, Ill.; E. W. O'Brien, Atlanta, Ga.; E. L. Philpot, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

W. J. ROOKE, Bus. Mgr.

Sworn to and subscribed before me this 1st day of October, 1933.

E. L. PHILPOT, Notary Public.

My commission expires March 2, 1935.

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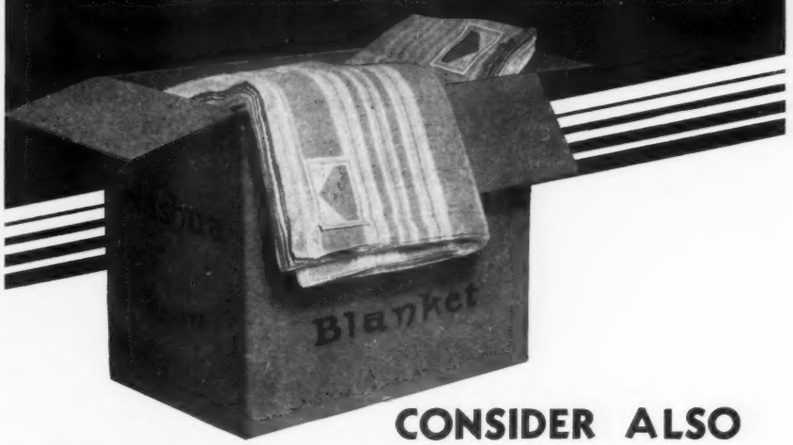

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PERSONAL NOTES
about Men You Know

R. P. SWEENY has become superintendent of the Exposition Cotton Mills, Atlanta, Ga. He succeeds FLOYD B. WATSON, who, as announced last month, has returned to his previous position as superintendent of the Griffin Mills, Griffin, Ga. Some years ago, Mr. Sweeny was superintendent of the Social Circle (Ga.) Cotton Mills, later being manager of the Buffalo Mill, Buffalo, S. C. For the past several years he has resided in Greenville, S. C.

ELLIS J. BOSWELL, formerly overseer of carding and spinning and superintendent, at the White Hall Yarn Mill, White Hall, Ga., has recently been made overseer of carding at the Panola Cotton Mill, Greenwood, S. C., succeeding J. R. PUTNAM, resigned.

J. E. MCDOUGALL has accepted a position with the Smith-Drum Co., Philadelphia, Pa. He is a graduate of the textile department at North Carolina State College, Raleigh, N. C.

THOS. H. POPE, a graduate of the Clemson textile school in 1925, has accepted a position with Robert & Co., Inc., architects and engineers, Atlanta, Ga. Mr. Pope has been connected with the Planters & Merchants Mills, New Braunfels, Texas, in designing and cost work.

JOSEPH P. WALTON, formerly overseer of carding at the Cannon Mills, Kannapolis, N. C., has been promoted to the superintendency of the Social Circle (Ga.) Cotton Mills, which is operated by the Cannon interests.

ROBERT Moss, formerly second hand in weaving at the Otis Co., Palmer Mills, Three Rivers, Mass., has taken a position as overseer of weaving, slashing and drawing-in at the Anthony Division of Berkshire Fine Spinning Associates, Anthony, R. I.

A. SIDNEY JAY, for the past ten years purchasing agent for the W. A. Handley Mfg. Co., Roanoke, Ala., has joined the sales force of J. E. Rhoads & Sons, of Philadelphia, manufacturers of leather belting and lace leather. Mr. Jay will operate under the Atlanta, Ga., office of the company, and will cover the territory formerly covered by the late JOE D. PERRY.

M. A. LAW, who graduated from the North Carolina State College textile school in 1932, is now superintendent of the Rodman-Heath Cotton Mills, Waxhaw, N. C.

LUTHER H. HODGES and W. D. CARTER have been made joint managers of the Carolina Cotton & Woolen Mills Co., Spray, N. C., which operates 14 plants in Spray, Draper, Leaksville, N. C., and Roanoke and Fieldale, Va. Both men have been with the organization in executive positions for many years.

ALLAN B. SIBLEY has been made assistant superintendent of the Laurens Cotton Mills, Laurens, S. C., where he has for four years been cost accountant and designer. Mr. Sibley is a graduate of the textile department of the Georgia School of Technology, Atlanta, Ga.

JOHN F. MATHESON, a graduate of the textile school at North Carolina State College, has been made general manager of the Mooresville Cotton Mills, Mooresville, N. C., which was recently reorganized following a receivership. W. B. COLE, of Rockingham, N. C., who has been receiver for the company, is now president, and ROBERT LASSITER, formerly president, is chairman of the board of the company under the re-organization.

W. A. MITCHELL, at one time agent of the Massachusetts Cotton Mills, Lowell, Mass., and later agent of the Houston Textile Co., Houston, Texas, has joined the organization of the Agricultural Adjustment Administration of the Department of Agriculture, Washington, D. C., in connection with the administration of the cotton processing tax.

W. S. NICHOLSON, recently connected with the Excelsior Mills, Union, S. C., and previously president of the Union Buffalo Mills Co., Union, has been made assistant deputy administrator of the National Recovery Administration, under Deputy Administrator A. D. WHITESIDE, in Washington, D. C., with special relation to the textile industry.

C. E. FOLK, formerly connected with J. H. McAden Co., Charlotte, N. C., has been made superintendent of the Dutchess Fabrics Corp., Statesville, N. C.

J. S. KING has been made superintendent of Easley Cotton Mill No. 1, Easley, S. C. He was formerly at the Woodside Mills, Fountain Inn, S. C.

H. L. PRUITT has resigned as overseer of weaving at the Lanett Mill of the West Point (Ga.) Mfg. Company, at Lanett, Ala., to become superintendent of the Adams-Swirles Cotton Mills, at Macon, and the Washington Mfg. Company, at Tennille, Ga. He succeeds J. W. HAMES, resigned.

J. FLOYD CHILDS has been made overseer of weaving at the Lanett Mill of West Point (Ga.) Mfg. Company, at Lanette, Ala., succeeding H. L. PRUITT, Mr. Childs is a graduate in textiles at the Georgia School of Technology, Atlanta, Ga.

W. B. DIAL has accepted a position as second hand of carding at the Pepperell Mfg. Company, Opelika, Ala.

JOHN A. MCFALLS has resigned as superintendent of Mooresville Cotton Mills, at Mooresville, N. C., to become connected with the Morgan Mills, Laurinburg, N. C. He is succeeded at Mooresville by WILLIAM F. SUMMER, who has been assistant superintendent, and C. W. GUNTER has been promoted to the position of assistant superintendent.

Obituary

ANTONIO B. SPENCER, president of the U. S. Ring Traveler Co., Providence, R. I., one of the most widely known men in the textile field of New England, passed away in Providence, at the age of 81 years, on September 16th. Mr. Spencer and ex-Senator EZRA DIXON, of the Dixon Lubricating Saddle Co., Bristol, R. I. were inseparable friends, and formed the Dixon-Spencer Associates, which comprises many of their mutual friends engaged in the textile business. More than 400 of his friends attended a testimonial dinner some years ago in celebration of Mr. Spencer's 70th birthday.

CHARLES G. HALL, superintendent of the Graniteville mill of the Graniteville Mfg. Co., Graniteville, S. C., died by his own hand at his home recently. He was 44 years of age and is survived by three children. Mrs. Hall had previously passed away, and despondency over her death was given as the cause of Mr. Hall's act.

CHARLES PIEZ, chairman of the board of Link-Belt Co., Chicago, Ill., passed away on October 2 at the Garfield Hospital, Washington, D. C. Mr. Piez, with CHARLES M. SCHWAB, directed the wartime work of the Emergency Fleet Corp. He was a past president of the American Society of Mechanical Engineers, and was recognized as one of the country's leading industrialists. Pneumonia was the immediate cause of his death, but he had been failing for the past five years, and since February 1932 had been wholly inactive in business.

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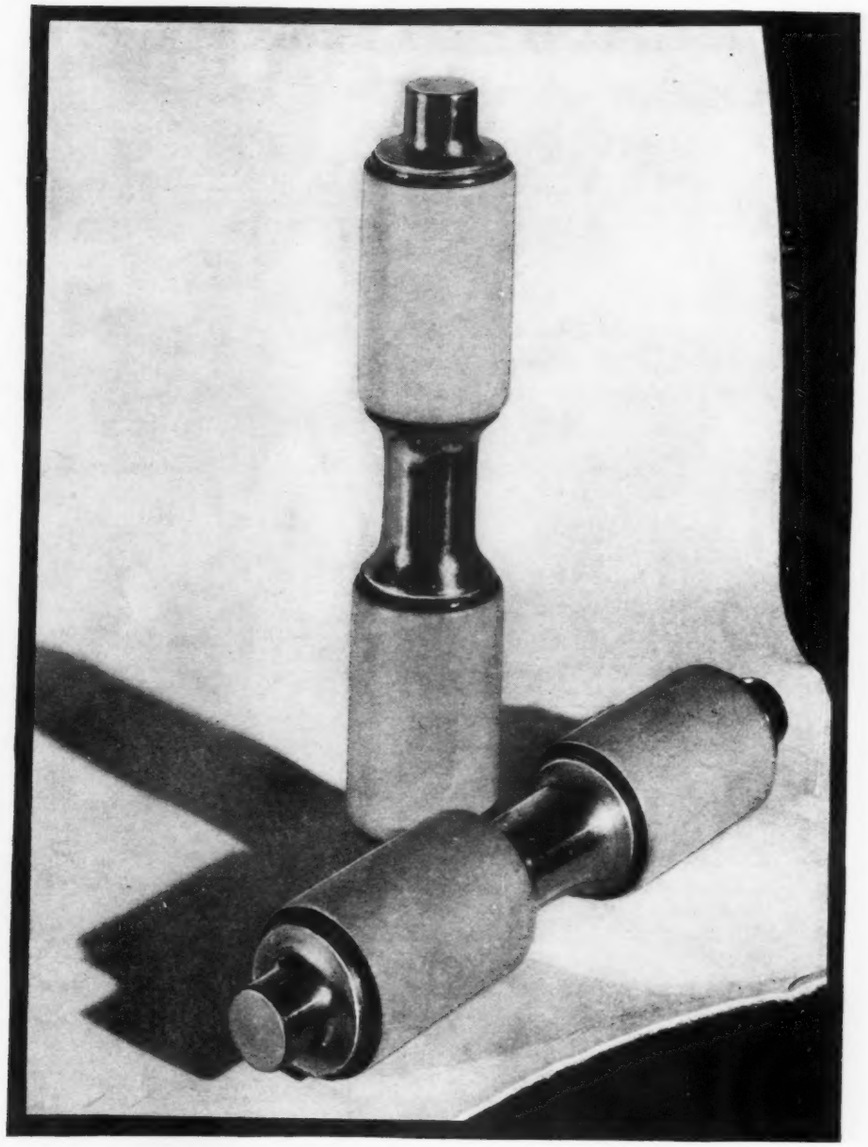

THERE IS an increased cushion naturally provided by SPINNA CALF. This prevents slippage and is an important reason why the breaking strength of yarns is greater with SPINNA CALF.

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The shade's so new and the news is so timely, we can't tell here which du Pont Dyes will give you this winning combination. But if you'll get in touch with us at Wilmington or at any one of the sales offices listed below we'll be able to furnish you with the dye formulae that will produce Eagle Blue. Don't put it off. Do it today. Play the newest blue and profit. *Name Reg. by Sidney Blumenthal & Co.

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AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

The Story of Old Timer's Methods of Working and Management

Part Sixteen—Continued from October Issue

IN this, the sixteenth installment, Old-Timer and Jim give some helpful pointers as to keeping records in the weave room. This department was covered rather fully in the early installments, but they came back to it here. Also, Old-Timer reports, to show the value of records, some figures on a five-year test on loom belts . . . . . .

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part of the conversation, and those in *italics* are JIM'S part.)

Now, I guess we can pass on to the cloth room and see if we can find anything of interest to talk about.

Cloth room? The heck, you say! We haven't discussed weaving yet.

Oh, yes, JIM, you have forgotten that we started off by your wanting to know how I learned to fix looms.

Sure, OLD-TIMER, *but we only discussed loom fixing, and surely you are not going to skip the weaving overseer. You have laid out quite an exhaustive system for overseers of carding and spinning, therefore, we must do something about the overseers of weaving or they will feel slighted.*

O. K., JIM, here is the old book. We will take a look. The first item I see concerns the Inspection of Warps. It is:

Laps on Beams: 3/13/29; 3/29; 4/17; 4/30; 5/14; 5/28; 6/18; 6/29. That is enough dates to show about how the overseer is making those inspections.

We do not allow the weavers to run laps around the warps even if two ends are stuck together. We split them at the whip roll or the drop wire bar or do something to make the end run into the cloth where it was intended to go.

Inspection of Feelers: 10/21; 11/15; 12/29; 1/12; 1/25; 2/14.

This shows that the overseer is making a special inspection of feelers at these intervals of about once per month. Let me explain again that this does not mean the feelers only have attention once per month. No, not at all. The overseer and his assistant both notice the feelers while going over their cloth *each day*, but the foregoing report shows that the overseer *himself* made a *special* inspection on that day, not only of the feelers to see if they are throwing out too much waste or not enough, but also paying attention to every phase of the feelers such as selecting several samples of filling quills on which the spinning frame had not built the proper bunch, etc., etc.

The next item is:

Slack Belts: 1/17; 2/12; 3/5; 4/8; 4/14; 5/16; 6/26; 7/8; 8/24, etc., etc.

Yes, I know that the average overseer reading this will say, "Shucks! I notice my loom speed all the time. Every time I pass a loom that is not making the speed I flag the fixer right then."

Well, that is fine. But *do you?* Just answer the question for yourself. You need not answer it to me, because I already know the answer. I have been an overseer of weaving, brother, and I believe I have tried as hard as most any man to do all of these things which every conscientious overseer knows he should do, have tried to keep all of these things in my mind and do *all* of them *all* of the time, but would wake up to the fact about every so often, as the slang expression goes, that I had not done a certain thing in months and months and had been all over it, every day. Just for example, one time I waked up to find most of my rocker shafts badly worn, and I had what I thought was a good oiler, too. Of course I hear you

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Satisfies overseers and weavers alike

TEXTILE COUNTER SPECIALISTS — Veeder-Root INCORPORATED HARTFORD, CONN. — SOUTHERN OFFICE GREENVILLE, S. C.

say that was just darn poor oversight, and I will admit all of it, but you will admit also, if you will be honest with yourself, that you have been just as negligent in some things you have overlooked.

What I am trying to show you, brother, is an easy way, not only to make such things fool-proof, but cause you to be a better overseer or superintendent than you ever thought you would be, and at the same time remove that "uneasy feeling" that is in most overseers' and superintendents' minds (or should be) that they have forgotten something until the blamed thing shows up. And I don't believe the average overseer or superintendent can walk through a weave room and pick out the looms which are making 160 picks and those that are making 158 picks. In fact, unless a *line* of looms is down to 158 picks I have found it pretty hard to see the difference in not over two picks, and I have also found that a larger number of looms in most any room of belt-driven looms are off one or two picks more than most overseers and superintendents will believe without actually counting them. Suppose you, Mr. Reader, just put a man or woman to counting all your looms *one time* and give you the report with a red ring around each one which is not up to the speed you are supposed to run. Then see how many picks you are losing per minute. Divide this by the picks one loom will make per day. This will show you how many looms you will gain by going over your belts and making them pull the loom up to speed. If you find 80 looms making 158 picks per minute where they should be making 160, then $80 \times 2 = 160$ picks lost per minute or the equivalent of putting one more loom in your weave room.

(Note: A loom belt cannot be treated with belt dressing to make it pull like you can treat a spinning frame belt or card belt or most any other belt because a sticky belt will cause the loom to bang off. Therefore, the treatment and upkeep of loom belts presents an entirely different problem from any other belt in a cotton mill. In 1931, I believe it was, COTTON published some very interesting and helpful articles on the treatment of loom belts. Those articles will increase the production in any belt-driven weave room if the overseers will follow the instructions given.)

Yeah, I written one of them.

You mean you wrote one of them, JIM?

Oh, well, anyhow—

Never mind trying to explain. You were just about asleep anyway and I am surprised to know that you were paying the slightest attention.

I am not asleep every time my eyes are shut, OLD-TIMER.

Yes, I know, JIM, but the way you act sometimes a person would think you were asleep with your eyes open.

Go on! Go on! For goodness sake, get off of loom belts. What is the next item?

Before we leave the loom belts, JIM, here is a little information I wish to pass along in the hope that some overseer or superintendent will realize the importance of keeping a better record on loom belts. Personally, I have always felt that some belting firm would some time put out a belt which would hold the speed of a loom up to standard better than the regular oak-tanned belts do that are so universally used. The first attempt by belt manufacturers resulted in a belt which would become sticky and cause the loom to bang off and of course along comes Mr. Fixer with a hand full of starch to put on his belt, thereby defeating the very object we were striving at. Of course regular oak-tanned belts will become sticky sometimes and the fixer will put starch on them too to prevent his loom from slamming.

Well, after several years of experimenting most all of the belt manufacturers were putting out a soft-tanned belt which would not cause the loom to jerk and bang off.

Goodness, how glad I was when the salesman came around with these belts. The leather had a good smooth feel that all of us knew would give more picks per loom than the regular oak-tanned belt.

One of the demonstrations was to take a piece of the soft-tanned belt and a piece of oak-tanned belt, lay them on your desk, or any smooth surface, and note the great difference in the pull or friction as you would slide them. Certainly no reasonable man could doubt but that the soft-tanned belt would give more speed and would also last longer, because all overseers of weaving know that the oak-tanned leather gets hard with age.

We selected two reputable belting firms which made the soft-tanned loom belts and bought a number of loom belts from them. We installed, at the same time, a like number of new oak-tanned belts. A salesman showed up with a good looking canvas belt and we bought enough to run the same number of looms we had installed the soft-tanned belts on, so here we were with four kinds of new belts all starting off together and arranged so they would be on the same shafting and therefore subjected to the same shafting speed. That was five years ago, and I remember distinctly, JIM, you laughed at me for putting on the new oak-tanned belts because, as you explained, any fool should know that the soft-tanned belts would beat it, and I thoroughly agreed with you. Then what in heck was I putting on the new oak-tanned belts for? I gave as my reason that I wanted to make the record complete.

Now, I am darned glad I did it and I am simply submitting the record here with no further comment than to say that I would have been glad at the time to bet any man two to one—yes, four to one—that the results would not have been what the following record shows. In fact, it was hard for me to believe the record was correct, but here she is, and if you wish to inspect the details of the reports you are welcome. The record started April, 1926, and this report is up to and including February, 1928, or 23 months—with day and night run is actually 46 months or nearly four years. The following speeds are the result of adding up all the reports (where speeds were taken) and merely giving you the total number of picks for each make of belt. We have also divided the report about in half, that is, we report results of first 23 months or about two years, then the next two years separately, in order to show whether any special make of belt showed up well while comparatively new, then

(Continued on Page 80.)

Good Penetration on Hard Weaves

112 X 60 broadcloth made of carded yarns is not the easiest weave construction by any means. A well known superintendent running his whole mill on the above construction, after having adopted the use of ARCY liquefied starch because of its advantages, in a recent report on the subject, enumerates some of these advantages as follows:

"We find a very noticeable increase in the amount of added weight taken up by the warp yarns, due to the increased penetration of the size into the yarns ***."

"Then again we do not have the trouble of circulating pipes becoming stopped up, because the size solution is practically a non-congealing solution, and prevents formation of caking in the cooking ketttles, hence we find it very free from lumps ***."

"Excessive humidity, I find, is not needed in the weave room for properly conditioning the warps for best weaving conditions ***. I find no trouble in changing from one car of pearl starch to another, or from one brand of pearl starch to another brand, since the enzyme liquefies pearl starch made by all the different starch manufacturers equally well ***."

ANOTHER WELL KNOWN SUPERINTENDENT WHO HAS CHANGED HIS MILL TO ARCY LIQUEFIED PEARL STARCH, AMONG OTHER ADVANTAGES, FOUND:

"In seven weeks our weave room sweeps have been materially decreased, with less shedding in the weave room, and more penetration of the yarn by the size ***."

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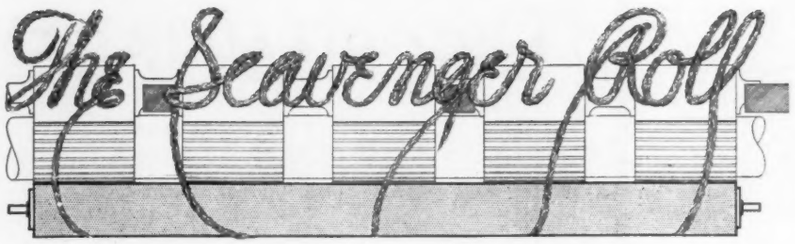

"Life is not so short but there is always time for courtesy."—Emerson.

"A light hidden under a bushel not only fails to radiate; it is likely to expire for lack of oxygen." —The Roll.

With the above double-jointed text, The Scavenger Roll comes to our columns for the third time. The purpose of this new department is to pick up ideas from this mill and that, and deposit them here for you and others in pithy paragraphs. If you haven't already told us whether you like it or not, please do so now. The Scavenger Roll will welcome also suggested topics and paragraphs from readers. Let us hear from you.

On Handling Salesmen

This remark was made by a successful superintendent: "Traveling men are like bees; they are carrying pollen all the time, and if I'll just let them, they'll give me some of it." The opposite viewpoint is expressed by notices occasionally sent out by mills, the gist of which follows: "Please instruct your representatives not to call on our superintendents. The purchasing is done at the central office and the superintendents have no authority to make purchases."

All human and social considerations aside, and looking at the question entirely from a selfish and material standpoint, which of the foregoing attitudes toward traveling men is more profitable to a mill and to the entire industry represented by the mill?

Our information and observation lead us to the conclusion that mill men and traveling men have gone through a process of evolution during the last generation. What is said here is by no means meant to detract from the contribution our forebears made to the textile industry, as manufacturers and as salesmen, for we realize that upon their faith and vision our progress has been built. But from their experience and mistakes we must learn, just as those who come after us must learn from ours.

It is said that in the old days, to use a colloquialism, a salesman "had to drink a man under the table to get an order". That day has gone, if not entirely at least to the extent of 95 per cent (the 5 per cent being allowed for conventions, expositions, etc.) In responsible positions in the mills today, and coming more to the fore each year, is a group of clear-thinking, scientifically trained minds, to whom sales must be made on the basis of reason and value. The reaction of the salesman to this condition has been natural; he has become more of an engineer and specialist in his line, bristling with helpful information and experience rather than pint bottles. Quite reverently we are thankful the "good old days" have passed and that the day of the scientific manufacturer and engineer-salesman is with us.

These facts are salient: 1) The mills are the laboratories of the machinery builders, the transmission people, the equipment manufacturers, etc. From experiences in the mills deductions are made and improvements accomplished. 2) No mill nor group of mills has the complete store of manufacturing knowledge. 3) A light hidden under a bushel not only fails to radiate; it is likely to expire for lack of oxygen.

There are salesmen who shouldn't be allowed in the mills; they shouldn't be on the road at all, for that matter. In such a large group of humans there are all kinds. But the interests of the mill and the rest of the salesman class shouldn't be made to suffer because of the few undesirables. They can be eliminated, or at least side-tracked. As we see it, mills make a grave mistake when a man of the engineer-salesman type is not allowed to interview the manager, superintendent, or what you will, who uses the material he sells, whether or not this official has authority to purchase. Conferences are held by the score each day between practical, technical mill men and engineer-salesmen wherein both are benefitted incalculably.

Under the NRA

A North Carolina superintendent tells this story in support of the old adage that you can't please everybody. Recently one of his employees complained, "Working eight hours just ruins the day". There is another side to this picture, too, and we saw it recently when a girl with strong character shining in her face came into a superintendent's office. She had just come to work on the afternoon shift; her mornings are spent in the high school across the railroad tracks from the mill. Most of her supper hour is being used to supplement the morning spent in the high school by attending the mill's vocational class. And without wishing to moralize, sermonize, or what you will, we do want to say that if all of us would use our leisure time as wisely as this girl is doing what a blessing the "Blue Eagle" would be to the Nation.

More Humor (?)

One traveling man heard a knock on his hotel room door one night, and in reply to his query heard, "Telegram, Boss." "Just slip it under the door; I'm taking a bath." There was a long moment's pause, then from the other side of the door came a plaintive voice, "Ah can't, Boss; hit's on a tray."

About Re-Working Spinning Rings

In an effort to economize during the depression some mills tried having spinning rings re-worked. Rings that were worn to varying degrees were sent to shops (not shops manufacturing new rings) to have the waves and grooves in the rings eliminated. From examination of several lots of such reworked rings it seems that the operation consisted simply of grinding the rings until a smooth surface was obtained, then polishing.

Poor results generally have been obtained from such rings for the following reasons: 1) All rings do not wear down uniformly so that different amounts of stock have to be removed to leave smooth surfaces. Rings that were originally number two flange have come back from the re-working shop with flanges from one to one and three quarters. It is obviously impossible to fit travelers to such variable flanges. 2) When a ring has worn in waves or a groove has been cut in the web to such an extent that the ring needs replacing, grinding out sufficient stock to give a smooth surface takes off such a large part of the case-hardened outer shell of the ring that service from the ring in proportion to the re-working cost cannot be obtained. Furthermore, the ring web, originally about .035-inch thick, is often ground to paper thinness, so that frequent breakage results.

The only re-working job worthwhile on spinning rings is that of polishing the second or unused flange when the reversible rings are ready for turning over. Some re-working of band and vertical type twister rings is possible where a shop is well-equipped for the work, for as shown in an article on twister rings in COTTON some months ago re-hardening of the rings is necessary after the waves have been eliminated. Some mill men were under the impression that the re-worked spinning rings had been "built up" to their original dimensions. Reasoning would show the practical impossibility of such building up; this falling, a flange gauge or breaking a few of the reworked rings would establish the point.

Do You Do This?

One venerable superintendent who has our unlimited respect as a manufacture of quality goods gives us a point on one of the "little things" in the mill. Every two years he takes out the cams or heart wheels of his roving traverses and has them ground to a new point. The dulling or blunting of this point of course allows dwelling on the part of the roving traverse, no matter how much weight or how strong the spring one may have on the traverse to keep the fork in contact with the cam.

H.M. McCORD

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** To observe or mark the difference between; select.*
(Webster's Dictionary)

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QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

(Editor's Note—The necessary omission of the "How Other Men Manage" department for the October issue caused a delay in presenting the further discussion between "Wash" and "A. T. G." and other comments. The first three letters in the department this month refer to this discussion, which has appeared in the several issues preceding September.)

"Wash's" Rebuttal to "A. T. G's" August Letter

EDITOR COTTON:

I have read the answer of "A. T. G. (S. C.)" in the August issue of COTTON, page 78, to my list of questions which appeared in the December issue. His article should be entitled, "An echo from a textile school graduate"—to create an echo requires something empty or hollow. I am sure that most readers of the "HOW OTHER MEN MANAGE" department classed his article as egotistical.

In the second paragraph of his letter he claims I aroused him, and by the nature of his letter, I believe him.

In his third paragraph he advises me to visit some of the textile schools and take inventory of their courses and the character of the men who maintain the various departments.

I have visited, many times, all of the textile schools in the East, and have visited hundreds of mills in the North and South. For years I have been friendly with most of the men at the head of the textile schools, and I know they are only human and have their good and bad points.

In his fourth paragraph, "A. T. G." makes his first wise crack when he states, "The textile school can be admired in that it teaches its graduates to have a broad and open mind." In other words, "A. T. G." would have us believe that the textile school changes your nature and principle. In the same paragraph he states, "It teaches them to analyze and to think wisely and conservatively." I think the readers of this department will agree, after reading his article carefully, that he was absent from class when the subject of wise thinking came up.

What he states in the fifth paragraph of his letter proves that if he is open-minded, intellect and wisdom have had no chance of admission. I will prove it. In part of my first question, I stated, "the lap rack and drafts are in perfect condition." (This question asked why the breaker lap, with the lap rack and drafts in perfect condition, would be larger at one end than the other.)

Now, if "CONTRIBUTOR NO. 6207" or "A. T. G." knew what they were doing, they would not look to a weight touching the floor or the draft escaping from the side of the cages due to worn leather strips, which they said would cause it—for in either case the rack and draft would not be perfect.

From the way the question was given by me, any active mind would know that the trouble was in the back of the picker.

In his sixth paragraph "A. T. G." proves that he writes before he thinks when he says, "My criticism is directed not toward practical men as a group, but to 'WASH' alone, who has refused to recognize the graduate." Now, boys, get the point here: "WASH" alone. Well, now, I think most readers will agree that I am not alone in refusing to recognize any textile school student or graduate who lacks experience and practical knowledge.

What "A. T. G." says in the same paragraph about my making a burlesque of my knowledge, and also what he states in the seventh and eighth paragraphs amounts to little. For, after all the great things he says about the textile school and the men at their head, he winds up by taking his hat off to the practical men.

Now for the first question: *"The breaker lap is larger in diameter at one end, although the lap rack and drafts are in perfect condition. What causes the diameter of the lap to be larger at one end?'*

After giving me another roasting, "A. T. G." gives the following answer: "The worn leathers allows the passing stock to be drawn through the flue to the dust pit, but the replacement with new leather eliminates that trouble."

I wonder how many readers considered his answer seriously. Picture in your mind if you can a man who states, "I have had experience. I have had a technical education. I boast of neither." I don't blame him for not boasting after making such a statement. Just think of it, here is a man who claims he has studied both theoretically and practically, and would have us believe that enough stock can pass the opening where the leather is worn to make the lap larger in diameter at one end.

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Well, perhaps "A. T. G." may have a very large dust pit to receive that raw stock.

The foregoing answer alone is enough to brand "A. T. G." as only a theoretical man without experience, for no practical man would make such a statement.

In connection with the second question, "A. T. G." in his fourteenth paragraph states "'WASH' needs to be commended for his own splendid explanation in June of the relation of the doffer comb to the doffer, and its effect upon the web." So, he admits I did not do so bad from my burlesque knowledge.

We come to the drawing frames in the third question: *"On the drawing frames some days we have a tight web between the front drawing rolls and the calender rolls. Then the next day they run slack. What causes this?"*

Here again he gives me a little credit by stating that I have ingenuity but am not practical.

In the first place, answering him, I wish to state that I know how close to set drawing rolls without injuring the fibers, and in the second place, I know that a change of one tooth in the calender roll pinion is too great in most cases. In other words, you just close the rolls slightly and you create just a little more friction contact between the two front rolls. This is termed the art of drafting, and is not taught in textile schools; it requires knowledge and experience.

If a contributor ever pulled a boner, "A. T. G." does so in his nineteenth paragraph. He said he knows he is safe in saying that I am positively wrong when I say that in the case of leather rolls the draft between the front and calender rolls is less than one. "A. T. G." says: "I ask him to figure the draft on the machines that are at hand, and if the draft on the machines does not exceed one, I advise him to make some changes."

Now, is this wonderful reasoning, or is it only burlesque knowledge on the part of "A. T. G."? Let us see.

The figured draft on any machine is never attained; you get the actual draft only. Therefore, the actual draft is that of the proportionate amount of friction between the top and bottom rolls. So, if you run a very light sliver, the friction is slight, but if you run a very heavy sliver, the friction is greater in proportion to the weight of the sliver.

When I write an article, I usually try to set a trap for wise guys like "A. T. G." for you know that waste will not affect or offer the same resistance in drafting as wiry stock. When a cotton mill has a less number of finisher drawing deliveries than cards (which is a wrong hang-up) it must run a heavy grain sliver. But it often requires experience and judgment that is not obtained in a textile school.

One must be able to arrange the draft between the first drawing and calender rolls to suit conditions when obliged to run a heavy sliver. Therefore, in such a case, we have a draft less than one, for a draft of over one would strain the webs.

Every practical man will admit that to obtain the figured draft is an impossibility. Again, he will admit that the heavier the sliver the more the friction. In case of a heavy sliver, there is a dual operation between the first and second rolls, in other words, the front roll is over-worked. Now, how is a change possible under such a condition? The only way is to install more deliveries of drawing.

Here are the figures in such a case, which proves that I do no bluffing. Diameter of front roll, 1⅜-inch; gear on front roll driving calender train of gears, 24; carrier gear, 45; calender pinion, 30; gear on calender shaft, 24; calender diameter, 2-inch. The draft between the calender and front roll: 16x30x24 divided by 24x45x11 equals .969 draft. So, I am not positively wrong, as stated by "A. T. G."

In his twentieth paragraph he states that there should be a tension between the front roll and calender roll. Tension means strain, and any carder that will have his machines arranged so there will be a tension on the web at the card or drawing should be fired.

In the same paragraph he claims that the draft is so small that it has no effect upon the weight of the sliver. How does he know? When you stretch a web from a distance between the front rolls and calender rolls, you are making uneven work, and on that point let us have no argument.

Again, "A. T. G." states, "When the draft is less than one, a sagging of the stock is evident because the surface speed of the calender rolls is less than the surface speed of the front rolls." What foolishness!

If he had been a practical man he would have allowed for the loss in frictional contact between the top and bottom rolls. That is one of the things in favor of metallic rolls. Any fair-minded practical man can see that "A. T. G." is not a practical man, when he does not consider frictional contact. Let's read his foolish statement again: "When the draft is less than one, a sagging of the stock is evident."

The next one of my questions read: *"On a fly frame we have a taper of 27 degrees that causes the roving to run over and under. We have no taper gears on hand to change the taper, but must remedy the trouble. How is this done?"*

He then quotes the answer to this question, which I gave in the June issue, as follows:

"On the English builder or latch builder, in order to change the taper without changing the taper gear, you must make a mark on the center of a bobbin; next, run the carriage so the center of the eye of the presser pad will be on the mark on the bobbin; next level the poker bar; next, if you wish to increase the taper, shorten the poker bar. Next, raise the latch screws and run the carriage and set to the length of the layer desired."

"A. T. G." makes a point of the fact that I said if "CONTRIBUTOR NO. 6207" were a practical man, he would have followed with an explanation of the English builder, and that I failed to give the reason why the action of the builder, on the English type, is changed when the poker bar is shorter and when the latch screws are raised. He attributes this neglect to a lack of knowledge on my part.

Of course "A. T. G." did not understand my logic, simply because he is not a practical man. As I stated in my article, the taper is formed by a cer-

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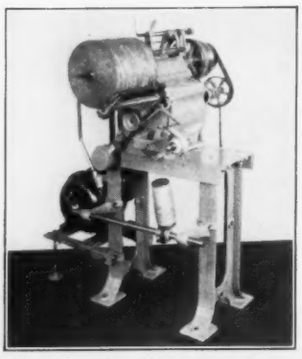

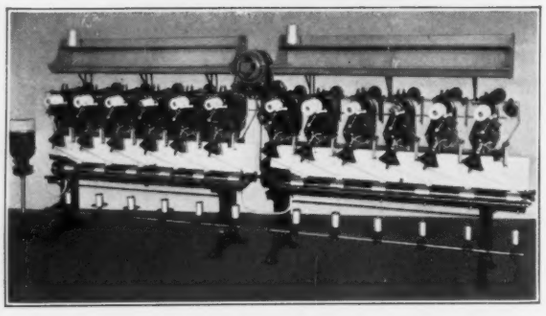

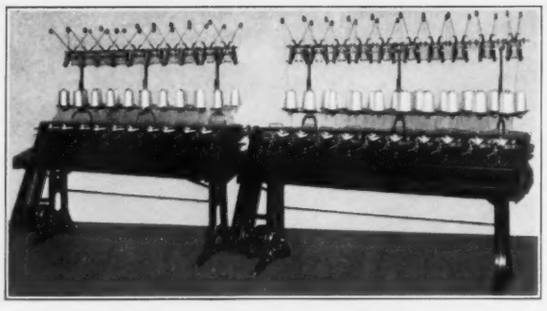

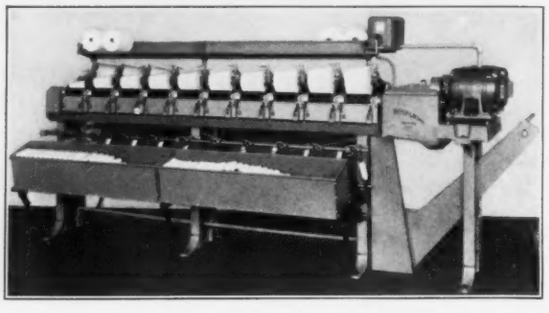

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tain degree of movement by the rack. The greater the movement of the rack, the greater the taper. For the sake of illustration, suppose the poker bar is 36 inches and the rack gear on the frame will move the rack ½-inch; you have only 1/72nd part of the poker bar. On the other hand, if the poker bar is only 12 inches, the same movement of the rack is 1/24th part of the poker bar.

Again, it must be admitted that the shorter the poker bar, the greater the angle, and the greater the taper.

When you set the carriage in the center of the bobbin with the poker bar level you get an even taper on both ends of the bobbin. If the poker bar is not levelled to the center of the bobbin, the taper will vary, which proves that the angle of the poker bar forms the taper.

Still, "A. T. G." says in his twenty-eighth paragraph that if I noticed any change in the taper of the bobbin, it was my imagination coming into play.

I think what I have written now will change his mind.

By his article, "A. T. G." has done himself little if any credit. I think the readers will agree that I have proven that he is not qualified to discuss the subject. Yet, I am greatly indebted to him for what he says in the thirty-first paragraph of his letter about making me a Czar of textiles. I have been a steady contributor to COTTON for over 20 years and apparently have wasted all of those years by not seeking to be the Czar of textiles, and why not, we have great men at the head of the baseball and moving picture industries!

"A. T. G." says he realizes that his language has been critical and abusive in spots. Let me address him directly:

Well, my dear "A. T. G.", such is expected. The readers of COTTON, I am sure, care very little whether you like or dislike "WASH". What they want is helpful information in their line of activity. In your long letter you did not give one practical idea or suggestion. When I write, I have the boys at heart. I want to give them the best that is in me, and at the same time give them something original that may help them later, and I generally succeed.

Now, you ask me for some questions pertaining to a weave room. Your experience, I assume, has taught you some weave room technique, and as a result you are in a position to ask some questions. O. K., "A. T. G.", here is one that will floor you: *There is a great amount of kinking between the shuttle boxes. How can it be remedied at the loom?*

If you answer this article, please answer every paragraph.

If unable to do so, please tell us and explain how enough stock can pass the side of the screen cage so as to make the breaker lap larger at one end.

Tell us something about the figured draft and the actual draft and why it is so called.

You claim you have experience with a technical education. Prove it.

Please let me add, "A. T. G." that you manifest the wrong spirit, and I am sure you do not read the OLD TIMER articles.

WASH (R. I.)

"A. T. G." Answers "Wash's" July Questions.

EDITOR COTTON:

In the July issue, page 83, I noticed that "WASH" again made an attack against the textile graduate. I have already submitted an article to you dealing with one of his previous attacks on the graduate, and again, I wish to say a few words in defense of the persons who are the targets for "WASH'S" contempt—the graduates. However, before discussing his latest attack, I wish to generalize briefly.

A few weeks past I read the following words: "Do not judge until you know," and after having read the two contributions from "WASH" one can see that he is ignorant of the quoted words. He has made a false judgment of the graduate. The reason why he has done so, I have already explained in a previous letter, (page 78, August issue), and I think there is no use to make specific explanations again.

Nevertheless, he has not failed to judge himself. No, he has not. He says to himself, "My long experience has taught me all there is possible to learn of mill operation and all problems pertaining to successful maintenance. I have mastered all technicalities. I have mastered all problems of manufacturing and of labor. There is nothing, specially, about a card room that I do not know. I am a superior man. I will now display my intelligence and challenge men of the industry to compete with my knowledge. I will even dictate to the graduate, for I know there is no possibility of his reaching the heights which I have attained."

The above words show the attitude of mind of "Wash". The articles which he has written are material forms of his selfish thinking. What a foolish pride he possesses! It is a tragedy that one is so selfish in his thinking.

The following question was submitted by "WASH" in the July issue:

"Here is one that is hard for the practical man and one which will floor the textile graduate!

"On a fly frame every little while the ends slacken and then pick up again but in almost every case a few ends break down. There is no slipping of gears in the train of gears from bottom cone gear to bobbin gear. The cones are tight on their shafts and do not slip. All keyed gears and keys are in perfect condition. When the condition happens the first thing the practical man will do is to put belt dressing on the cone belt or change the cone belt, which will not help the situation.

"This question is a practical one and a very helpful one for the reason that when the foregoing condition does occur it is hard to discover."

Before entering into a discussion I would like to ask "WASH" why he labeled this a hard problem for practical men and one that would floor the textile graduate. To think that such is hard is extreme audacity. This is a very simple problem. I would say that all problems dealing with mill machinery are simple if one has a thorough knowledge of the machine.

In the past "WASH" has made an attempt to

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floor—I'm using his own language—the graduate by offering questions that he thought were difficult. He cannot floor his opponents, for they have, and will continue, to answer his problems.

This is the last time that I will bore your readers by entering a discussion of "WASH'S" problems, for it is a waste of time to discuss such simple things. Likewise, it is useless to try to change his biased opinion of the graduate. I would consider it an easier task to try to remove the stars from the heavens.

He boasts of being practical. I wish he would redeem himself by sending something to you in the future that is practical. Now I will answer his question. I have seen the ends on a frame run tight and then slacken for a short time. The trouble was traced to the stop pawls that check the motion of the ratchet gear or tension gear on the builder motion. I have in mind the English type builder. The stop pawl on the right-hand side of the gear was a little bit higher than the one on the left. This condition permitted the gear to turn through a greater distance before being stopped by the pawl. The pawl on the left side of the tension gear was in such a position that when it came into action on the beginning of the downward motion of the carriage, the tension gear moved through a smaller distance than it did on the upward motion of the carriage. Since the positions of the pawls did not permit the gears to move the same distance on each reversal, the cone belt was, too, not shifted the same distance on the completion of each movement of the carriage. On the upward motion of the carriage, the tension gear moved through a greater distance before being checked by the high pawl, as a result, the cone belt was shipped further than on the downward motion of the carriage and the speed of the bobbins was decreased more, consequently, the speed being decreased out of proportion, the bobbins could not take up the roving as fast as it was delivered and thus the ends were slack. On the downward motion of the carriage, the pawl on the left of the tension gear would come into play but it would not permit the tension gear to turn as far. The cone belt then was not shifted as far as the time of the last reversal and too the speed of the bobbins was not decreased as much as it was on the last reversal, permitting them to take up more roving.

The stop pawls were adjusted so that on each reversal the gear moved through the same distance and as a result enabled the cone belt to move through the same distance upon the completion of each layer of roving.

The foregoing is not very specific, but I have considered that the readers are acquainted with the mechanism of the English builder, and too, I would not doubt that "WASH" will disregard this solution and come to the front with one of his "real answers." I do not proclaim that the foregoing is a solution or is a cause of all ends running under the condition mentioned in the problem. I have related the cause that existed in my own experience.

I know that the department of "HOW OTHER MEN MANAGE" was formed to provide helpful discussions of mill problems which concern your readers, and I am conscious that I have not given any material that might aid other men, having answered only the petty challenge of "WASH", and I wish to apologize to you for using this department as a means of accepting challenges and offering criticism. I hope that in the future I may submit something worthwhile in a way of justifying myself.

A. T. G. (S. C.)

Comments on "Wash's" Fly Frame Question and Asks Him One

EDITOR COTTON:

Having just finished reading the article by "WASH"—page 83 of the July issue of COTTON—I wish to go a step further than did "CONTRIBUTOR NO. 6195", who complimented "M. W. H. (MASS.)", "R. G. (R. I.)", and especially "WASH (R. I.)", and state that if either the practical man, the textile graduate or the correspondence school graduate will read the opinions of all of these gentlemen as they are presented in COTTON he will be a more alert and a better informed man.

I was interested in the following question from this letter—" 'Wash' Submits Another One"—"On a fly frame every little while the ends slacken and then pick up again, but in almost every case a few ends break down. There is no slipping of gears in the train of gears from the bottom cone gear to the bobbin gear. The cones are tight and do not slip. All keyed gears are in perfect condition." He stated that belt dressing on a good cone belt failed to help the situation.

Answering "WASH", I would guess that one of the collars holding the bobbin gear shaft in position had come loose or slipped along the shaft, allowing the bobbin gear shaft to sway back and forth. This would cause some of the bobbin gears to move out of mesh with the bobbin whirl and thus stop the bobbins and slacken the ends. And would say that in case of bobbins where the bobbin gear and whirl were meshing shallow, the bobbin was stopped so long while the shaft swayed that the ends came down. I should appreciate having "WASH" grade me on this answer.

Now, I have a problem which I should like to see discussed in this department:

If I am setting up a fly frame among others of a different make and can't get the right flyer speed, hence the front roll speed desired, can I effect the desired change with the gears? Suppose I have a 45-tooth gear on the jack shaft which drives the spindles and a 48-tooth gear on the top cone, receiving motion through an idler from the twist gear. I put a 48-tooth gear on the jack shaft, which causes the spindles to go 48-45 as fast as they did and I next put a 45-tooth gear on the top cone shaft (a driven gear), which causes the top cone, and hence the front roll, to go 48-45 as fast as they did. The spindles and front roll have now been speeded the same amount and I have an 18-tooth gear on the bottom cone. What size bottom cone gear do I need to make the fly frame run? Is it practical to speed up fly frames in this manner?

S. I. C. (N. C.)

How About Cleaning Ring Rails?

Spinners and others are invited to discuss this inquiry in detail . . . . . .

EDITOR COTTON:

I would be very pleased to see in the "HOW OTHER MEN MANAGE" department of COTTON some discussion as to the cleaning of ring rails, giving methods of cleaning and drying.

CONTRIBUTOR NO. 6265.

System Versus Red Tape

EDITOR COTTON:

In these days of "revolution" in the textile industry, supervisors—superintendents, overseers and assistant overseers—are faced with new and momentous problems that will tax their ingenuity. Less time must be spent in the office and more time on the floor, with the help, if results are to be accomplished and if "their" mill is to stay in the race. Needless red-tape must be cut and many problems tackled directly, with a minimum of lost time. Time spent in preparing reports that no one uses must be devoted to seeing that belts are kept on the tight pulleys. Keeping the looms warped up and supplied with filling must have right-of-way over the baseball team, the flower garden contest and other outside interests.

Cotton mills inherited a lot of red-tape from war days. Some of it is helpful, of course, but a business can become so entangled in red-tape and outside interests that the main object of the mill, the making of yarn and cloth, will become very much obscured.

A few illustrations of this condition will serve to show what the writer has in mind:

A beamer gear has broken and the overseer of beaming gives the section man an order to the machine shop to have it repaired, or a new one installed. The master mechanic is out of town and his assistant is over at the auditorium supervising the repair of the heater. All of the mechanics are working on jobs and have orders not to leave them until completed or until relieved by the master mechanic or the assistant. The result is that a beamer that supplies warps for sixty or more looms must stand an hour or longer until some red-tape is unwound.

The assistant overseers and several section men spend an hour outlining a baseball schedule, while a number of items come up on their respective jobs that should have immediate attention, resulting in lost production.

An assistant overseer spends an hour and a half working on a boy scout report while a beamer is waiting on yarn and no one else takes the time to see that the yarn is brought from the twisting room, but all concerned are just waiting for it to come down in the regular routine.

A loom is waiting on filling. The filling hauler reports it to one of the assistant overseers, who in turn reports it to the overseer of weaving. He, according to the red-tape, writes a note to the one in charge of quilling that such-and-such filling is waiting. As a matter of fact at another loom using the same filling, but on a different filling hauler's job, there were three boxes of this filling.

A carpenter is sent to repair the back steps of one of the mill cottages and he finds a bad sill, something that the householder had not noticed. Yet because of the red-tape he is not allowed to repair the sill, but must wait until the householder makes a complaint to the main office in the regular way.

From all this one might get the idea that it is the best plan to tackle every problem by "main strength and awkwardness". Such is not intended by the writer, but by all means do not let system, a very desirable thing, degenerate into red-tape.

At least once a year the superintendent should require each department head, including the office manager, to submit a list of all reports that they are required to make. He will usually find some duplications and often reports that no one even looks at after they are made. An overseers' meeting should be called for the special purpose of going into this matter. The men will doubtless leave this meeting with much more time to use in looking after important matters of watching quality and getting production.

System is a very different thing from red-tape and any overseer is foolish to undertake to operate his department without using some kind of system, or even several systems for his various duties and operations. But any system must be worked and watched. Just as a watch will not run indefinitely without winding one cannot expect any job to run on and on without some personal attention.

No system that confines the overseer or his assistant to the office will prove successful in the long run. Personal attention to details of the job count for more than any other one thing. But sufficient details should be delegated to subordinates to enable the overseer to leave the job at any time without inconvenience to the mill. While the overseer is on the job, however, he should not only give personal attention to various problems arising in his department, but he should train his understudies to do likewise. In this way his organization becomes so strengthened that he can leave the room at any time without fear that something will go amiss during his absence.

Let me give you one illustration how personal attention may result in a saving of dollars and cents to the company:

Our department is responsible for a number of overhead blocks for carrying warps to the weave room. The parts for these tackles are rather expensive. One day the writer met one of his section men on the way to the supply room with an order for a new pinion and drive shaft (which cost seven or eight dollars) to replace one that had become bent. A look at the old one convinced me that it could be fixed. "Let's see if the machine shop cannot straighten the old one," I suggested. Over his protest that it would not run, we carried it to the shop, and sure enough, in ten minutes it was as good as new, and it fit perfectly when put back into the block.

But why go on—the reader can easily supply ad-

ditional illustrations from his own experiences. Do not try to operate your room without system, but do not let system run into red-tape, and do not try to substitute system for personal attention.

TEX—(GA.)

Some Card Room Topics

EDITOR COTTON:

I would like to bring up some carding questions that were asked in COTTON sometime ago but on which there was not a great deal of discussion.

One question was, Why is it that after cards have been ground 10 or 15 years there are high and low flats, and why can't they be set to the same gauge and alike?

When we have trouble with a card that has good clothing on it, in many cases I have known of, too much vibration will prevent a tight setting. As a cylinder bearing is worn, when starting the card up, you bear down on the cylinder belt, which will pick the cylinder up and come against the top flat and, oftentimes in different places, there will be dull cylinder and flat.

Next, worn flat chains will prevent setting the front flat stand to a full gauge. There are only two ways to overcome this. The best way is to put new flat chains on, so the length of the chain will fit in between the teeth of the sprocket. If new chains are not possible, I would set the front stand to a full gauge and not set any other stands that far off, but set them as usual.

As to high and low flats, a stripper belt so loose that from time to time it comes off while the card is grinding will cause the flats to stop grinding, while the drum is grinding just the same. A slack grinding rope will cause this by not pulling the drum at a regular rate of speed, and often stopping on a high flat. So long as we have a slack rope or stripper belt we will have high and low flats. The way to overcome this trouble is to put the drum on the flat that is low and set to the low flat, and then put on an extra tight rope or a tight stripper belt, and when the high flat comes under the drum a few times they will all be equalized and the card can be set O. K. I would say let it grind from 10 to 20 hours, as I am sure this will do away with high flats and put all of them back uniform again.

As to how often a card should be ground, this depends on the ounces in the lap, the cleanliness of the stock, etc. If the stock is very dirty, then more grinding is needed, also if the cylinder fillet is loose more grinding will be needed. The tighter the fillet the longer the edge stays on. I would say that on 1⅛-inch cotton, every 20 to 25 days would keep the clothing sharp.

CONTRIBUTOR NO. 6275.

Look out! Here comes a hot one: There are not two per cent of the overseers and superintendents in all the mills of the United States who have not wasted enough time in ten years to have a diploma from any college in the country. Hold on, now, don't say I am a fool before you give the matter some thought.

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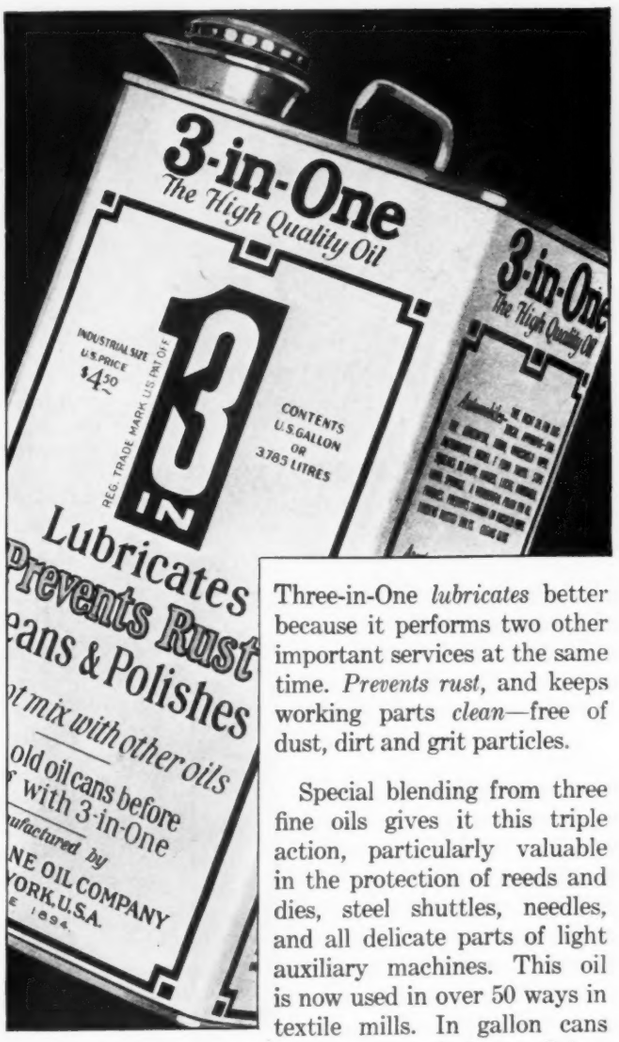

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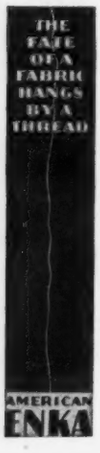

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A Slant on Human Relations

(Editor's Note—This contributor, along with the following letter, stated that we could regard it either as a personal letter or for publication, but that if we decided to publish it, then we should use all of it. We have decided on the latter course because we believe it contains information of value to our readers. Do you agree?)

EDITOR COTTON:

Remember what you told me in the shoe-shine parlor in Charlotte last summer? In speaking of some of my contributions to COTTON you expressed the belief that I had learned a lot myself by having attempted to put my ideas on paper and that perhaps I had decided that I didn't know as much in the beginning as I thought I knew. You were right both times. For one, I have learned that I have to be thorough and correct, and it takes more study of a subject to be able to write about it than it does to talk about it. I am constrained to believe that is the reason why some of our friends are so reluctant about writing anything; they are afraid of their lack of knowledge and at the same time they have a loophole if talking is all that is done.

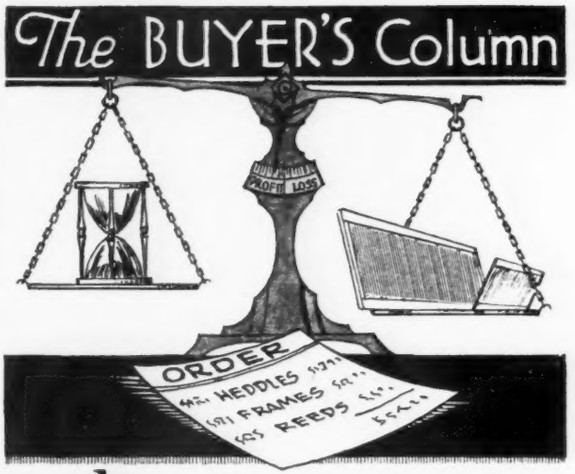
I have devoted my previous contributions to machines, improvements and devices, but I have at last made a "startling" discovery—the machines, improvements and devices are not all-important, rather I think it's the human element of the whole thing.

I have spent a large part of my leisure hours in reading about people and history with its thousands of changes has taught me more of human nature, human problems, human desires, want, misery and achievement than I could have learned through the school of experience alone. Yet in my work every day I find particular cases that my own experience in a like case before is very helpful.

I am of the opinion that we overseers have been very neglectful about the development of our folks, their improvement not only in ability to perform a certain duty but in leading them into a brighter outlook on life. We have had countless opportunities of attracting some of the fellows on the lower plane, so to speak, up into bigger worlds. This condition is no worse in the mills than it is in any other industry; almost invariably the man at the machine arrives at the conclusion that he must sacrifice his own personality if he wants to get along with the boss, and oftentimes he will say "yes" audibly when he at the same time is saying "no" in his heart.

A friend of mine relates a story on this point. Rastus was asked by his boss if he didn't think the last particular job the boss had done was performed in the best possible way and was a decided improvement on past methods. Rastus hesitated a moment, looked at the boss and almost shouted, "Yes sir, it sho is." After the boss had gone my friend said "Rastus, why did you deliberately lie about the way that job was done?" Rastus replied, "Well sir, I knowed what he wanted me to say."

It has not been long since a very prominent mill man made the statement that the old type southern



What Constitutes "A Good Buy"

by Blackie

In a nut-shell, it is—as far as loom harness equipment is concerned—the obtaining of the most productive item at the lowest cost.

•

But the productivity of an article cannot be gauged or measured in its unused condition.

•

Salesman's talk is cheap.

•

The article must be used and tested—not for a few days or weeks—but year after year under every conceivable condition.

•

It must cut down operating costs.

It must produce perfect fabrics.

It must reduce handling.

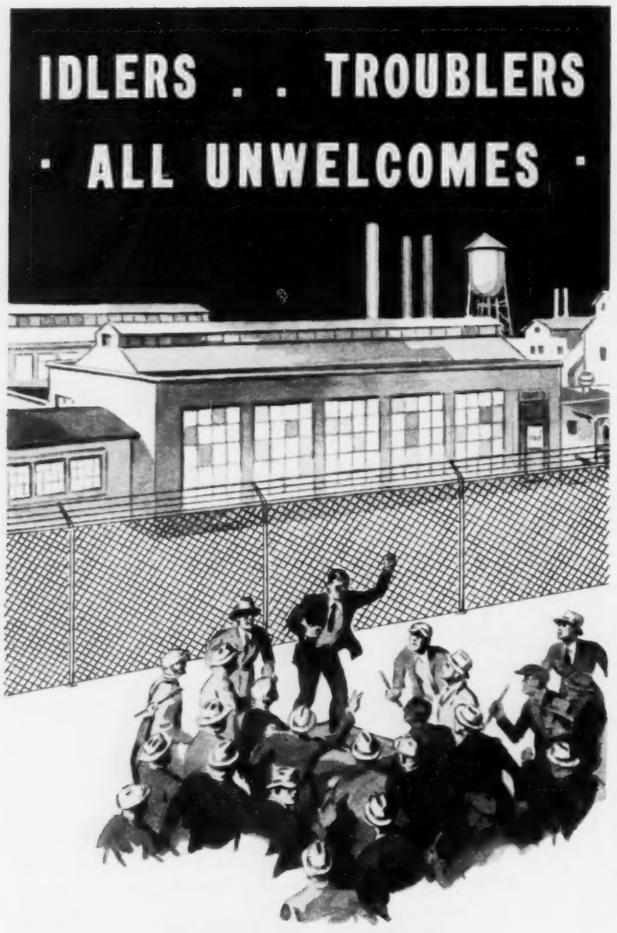
•

Two heddles may look alike, but the finish or the shape of the eye of one will differentiate between an inferior or an advantageous buy, because one will increase production and eliminate the seconds, while the other will give the ordinary results.

•

Steel Heddle Mfg. Co., with two large modern plants located in Philadelphia, Pa. and Greenville, S. C., has been serving the successful mills for over a generation because they supply more than merely good merchandise.

•



STAY OFF
Cyclone Fenced Property

You cannot afford to be without strong adequate fence. Have you ever considered how inexpensive it is to hamper the vicious professional trouble makers and entirely stop trespassers and unwelcome intruders?

You will be surprised to find how little it costs to keep out sneak thieves, save material losses, allow outdoor storage, reduce fire hazards and give your workers uninterrupted privacy with Cyclone Fence.

Near you there is a Cyclone organization, to offer timely suggestions and give vou immediate service in connection with your fencing problems.

Cyclone Fence is made by an organization with forty-seven years of Quality fence building experience. Made of copper-steel heavily hot-dipped galvanized it resists corrosion years longer. Erection may be made by our factory trained crews or by your own men if you desire. Complete details in catalog form will be sent upon request. Address Dept. C.

CYCLONE FENCE COMPANY

General Offices: Waukegan, Ill.

Branch Offices in All Principal Cities

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

Pacific Coast Division:
Standard Fence Company, General Offices, Oakland, Calif.

Cyclone—not a "type" of fence, but fence made exclusively by Cyclone Fence Company and identified by this trademark.

Cyclone Fence
REG. U.S. PAT. OFF.

RIGHT DOWN YOUR ALLEY!

You mill owners, superintendents, and overseers, who think your mill is too crowded for machine scrubbing. Trying to mop floors clean is a fallacy in any industrial plant.

The only way to clean mill floors thoroughly and safely is a whole room at a time. The Finnell comes in eight sizes. There's a right one for any sized mill. If not this big, double duty Finnell, then one of the smaller ones will scrub right down your narrow alleys, close up to the machinery, scouring away all the oil and dirt.

The Finnell No. 80, shown here, actually picks up the dirty water also, in the same operation. Gets the whole floor clean and dry before the operators can track it up. Reduces the danger of slipping on wet floors.

Demonstration Free. We have representatives everywhere. There is one near you who can be at your mill whenever you say and give you a free demonstration. Write or wire *Finnell System, Inc.*, 1311 East Street, Elkhart, Indiana. Canadian Distributor: Dustbane Products, Ltd., 207 Sparks Street, Ottawa, Ontario.

FINNELL

EST. 1906

ELECTRIC FLOOR SCRUBBER—POLISHER

mill overseer was being left out of the picture, and something inside of me said, "Amen". It's going to be mighty hard for some of that type to adjust themselves to present and future conditions and views of life.

I live in a mill community where the young people for the past 15 years have been encouraged to complete their education. It was only in rare cases of distress that a young boy or girl was allowed to work during the school term; because of encouragement and tactful pressure this town boasts of more college graduates per capita than does the average commercial town. As to the different walks of life they are in, some are teaching school, some are doing office and clerical work, some are connected with associations for the betterment of "just folks", some of them are working in the mills, while some of them are mothers who are rearing families which will be another evolutionary step in the life of this community. You might be a bit skeptical as to the existence of such a community as this, but you know my address, so why not come and see?

All of which means nothing more than just this: These boys and girls will not be satisfied with the plane of life that their fathers and mothers before them were compelled to endure. The fact is that they will not submit to it and therefore it means that we overseers who expect to hold out to the end will find it necessary to make a great many adjustments in our ways and methods if we realize our hopes, for fully 50 per cent of the boys and girls in a mill community will go into the mills and run the machines which their fathers and mothers operated before them, and "Woe be unto him who offends one of these."

With our 15 years of progressive education I still find traces of that old "fear of the boss" which to my mind is pathetic. A few days ago a woman stopped me and asked if I thought it would be a sin for her to sign one of these NRA pledges. She was in earnest, too. I asked her if she had any doubts about it and if she did why. She pulled a Bible from her apron pocket, turned to the book of Revelation and read the description of the beast having seven heads, ten horns, and the prophesy of the coming mark of the beast upon those who buy and sell. She said to me, "Now, I know that you read the Bible a lot, and I don't believe that you would tell me wrong about this. I want to do whatever is right, but some people tell me this NRA is what the book of Revelation was pointing to; and please don't you tell my boss man about me asking you, for he might get mad. You know how he is."

Needless to say, I did my best to disperse her fears and explain what the letters NRA stood for, the reasons for it, and reminded her of the fact that our president knelt before God when he was inaugurated and asked God to direct him in his administration. I told her that perhaps she did not understand her boss and that I thought he was a fine man and if she would talk to him about it that he would appreciate her for it instead of "having it in for her."

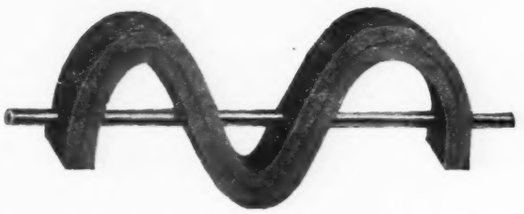
I think I killed two birds with one stone that time.

You're getting the BEST

when you buy

ORIGINAL AND GENUINE
Bondaron
REG. U. S. PAT. OFF.

Textile Leathers



As you look for the mark "Sterling" when you buy silver, look for the name Bondaron when you buy Textile Leathers. It is your guarantee of quality.

Made from the world's finest hides, specially tanned, and with the hair retained, Bondaron Leathers have been developed until they have no equals in the leather field.

It has been proved in many mills that Bondaron is the longest lasting, most efficient and economical Textile Leather obtainable. If you want to be sure you're getting the most for your textile leather dollars, we suggest that you equip your looms with *genuine* Bondaron. A trial will convince you.

(Send for booklet No. 101)

Manufactured exclusively by

CHARLES Bond COMPANY

617-623 Arch Street, Philadelphia, Pa.

Textile Leathers and Belting
Leather Curriers and Manufacturers of

PROCTOR the

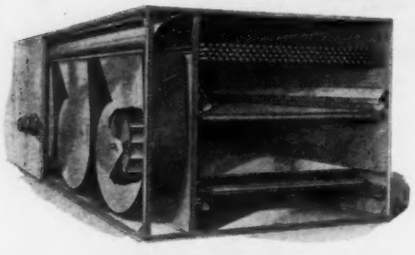
SUPER STOCK DRYER

In 1923, it revolutionized the drying of wool stock, cotton, linters, rayon waste, silk waste, etc. . . . setting a new standard of design, performance, economy of operation.

Since then . . . for 10 years . . . it has outshone and outsold all other dryers for the purpose. More important, it has itself steadily improved.

In 1933, with direct motor drives, variable speed control, hinged-girt conveyors with traveling side guards, increased insulation of panels and framework, leak-free steam heaters, intensified air-circulation, all-metal feed, and improved details throughout, the Proctor Dryer is higher than ever above comparison. It best meets today's needs of maximum hourly output, minimum cost of drying operation, dependability that means uninterrupted working schedules.

And remember, Proctor high capacity ratings are based on performance facts repeatedly demonstrated, and guaranteed in full measure for your own plant. Write now for complete acquaintance facts.



PROCTOR & SCHWARTZ, INC
PHILADELPHIA

The present trend in industrial work makes me feel better over the fact that I really and truly enjoy talking over any situation or condition with my folks, whether it be political, biblical, educational or other subjects, or the buying of a car, the condition of the sick, the birth of a new baby, sorrow for them, or what.

Maybe this is internal spontaneous combustion having an outlet, but whatever it is, I am hoping that we who have the responsibility of so many jobs and men will be able to acquire and retain the friendship and confidence of our folks all through life. We can do it if we have our hearts in our work and with our folks. Diplomacy and tact are beautiful words and mean well, but love and understanding are more practical. A word to the truly wise is sufficient, and if we are lacking in wisdom, we know where and how Solomon came into possession of his.

CONTRIBUTOR No. 6123.

An Old-Timer Says—

"The Story of Old-Timer's Methods of Working and Management"

(Continued from page 63)

fell down as it grew old or as it lost any special treatment which had been given the leather.

We are only showing the first four figures of the total picks made by each make of belt because the figures run up into the millions, but the figures left off would not materially change the comparison:

1st soft tanned belt	2nd soft tanned belt	Fabric belt	Oak tanned belt
First Two Years			
9356	9470	9642	9426
Second Two Years			
9544	9508	9560	9438
Grand Totals			
18900	18978	19202	18864

Thus the first soft tanned belt shows only 2/10 per cent more picks than the oak tanned.

The second soft tanned belt showed 6/10 per cent more picks than the oak tanned belt.

The fabric belt shows 1.8 per cent more picks than the oak tanned belt, but this is not all of the story.

16 per cent of the 1st soft tanned belts are off.
33 per cent of the 2nd soft tanned belts are off.
49 per cent of the oak tanned belts are off.
100 per cent of the fabric belts are off.

Therefore, the 1.8 per cent more picks shown for the fabric belt is misleading unless you know that the fabric belts were off of the looms (worn out or too short on account of continually breaking at the fastening). Another consideration is that the soft-tanned belts cost considerably more than the oak-tanned belts.

Draw your own conclusions, JIM, but you see, old man, that it surely does pay to keep records.

In the next installment, Old-Timer and Jim will continue their discussion of inspection of looms, etc., and will get a little closer to the cloth room, where they will have some helpful suggestions for use in this department.—The Editor.

Comments on Flat and Other Card Settings.

EDITOR COTTON:

This letter is to discuss the inquiry of "CONTRIBUTOR No. 6172", who wanted criticism of his card settings. He is using 1 1/16-inch Low Middling cotton, making 55-grain sliver, with the following speeds: Licker-in, 428 r.p.m.; cylinder, 165 r.p.m.; doffer, 11.5 r.p.m.

The card settings he gives for these conditions follow:

Feed plate to licker-in	7
Licker-in to cylinder	10
Back knife plate	29
Mote knife to licker-in, top	12
Mote knife to licker-in, bottom	10
Back screen to cylinder	22
Middle screen to cylinder	34
Front screen to cylinder	¼-inch
Doffer	7
Flats, 10, except front stand which is	17

The contributor has thus not listed all of his card settings, however, I do not agree with him on some which he has given. I have listed his speeds, settings, etc., so that I can pick them up separately and show wherein we differ on some of the ideas he has advanced.

He is running 1 1/16-inch cotton and I judge by the weight of his card sliver that he must be running around a 12-ounce lap. If this is so, I think his feed plate setting of 7 is too close. I would suggest that he move this setting to 10 at least, and if his laps are above 12-ounce, this setting should be still more open; otherwise, with 1 1/16-inch cotton the fibers will be broken by the licker-in teeth trying to take them away before they are liberated from the bite of the feed roll; he would also lose some of the combing effect of the licker-in teeth.

I think that his setting of 10 on the licker-in to cylinder is all right.

His back knife plate setting could be changed and improved. I would suggest setting the back plate at the bottom about 15, and about 34 at the top edge. This wide setting at the top edge allows the fibers room to stand up and be combed as they begin passing under the flats.

His mote knife settings seem to be all right. I might add that the knives should be exactly parallel to the licker-in; the higher the knife, the more waste is taken out.

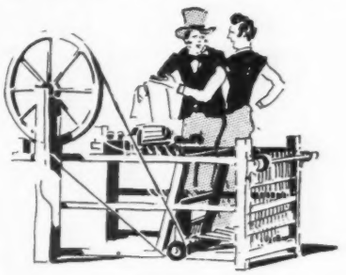
His three screen settings I shall treat as one. I would set the screen from the cylinder wire at the back and center, 34, and about ¼-inch in front. I think good results from this wide setting can be secured due to the fact that he will have less bunged up and damaged wire from chokes and tail ends of laps getting away from the card hands.

A setting of 7 on the doffer to cylinder is all right.

On his flat settings, where he says he sets the front stand to 17 and the rest to 10, I will quote him: "We set the front stand to a 17-gauge because they (meaning the flats) gradually load from the back and by the time they reach the front stand they are heavily loaded and a close setting will not give additional carding but will cause the stock to roll and pass into the web in that condition. We find that

The Story of Cotton

This is the third of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.



III. INDUSTRIAL BEGINNINGS

The story of cotton leads inevitably to Europe, where the lovely fabrics brought home by the far sailing ships of Portuguese, Dutch, French and—above all—English mariners stimulated men's minds to duplications. Cloth printing establishments spread through Middle Europe and Britain; roughly, the Eighteenth Century (the age of reason from which the industrial revolution legitimately descended) saw this important department of the textile industry borrowed from the Orient and firmly established in the West.

Cotton soon made its bow to polite society. It became *the* fashionable fabric, chintz in 1686 "being become the weare of ladyes of the greatest quality . . . [which] they line with velvet and cloth of gold." Thence the popularity of cotton spread downward, until the inroads it made into the markets of the more native European fabrics roused nationalistic protests.

This was particularly true in England, noted for its woolens. The growers and manufacturers of wool banded together to drive cotton from the "scept'r'd isle." The first law against cotton was passed in 1712, and nine years later another, more stringent law fined the wearer of cotton £5 and the merchant who sold it to him twenty. A constant barrage of propaganda was laid down against the fleecy staple. "Thirty shillings a yard for muslins," exclaimed one indignant pamphleteer, "and only the shadow of a commodity when purchased!"

It was all of it ineffective. The smuggling of calicoes went on apace; and in Lancashire the actual manufacture and printing of cotton cloth continued. In 1736 the law was amended.

Other European countries lagged far behind England in the development of cotton textiles; but even in England cotton manufacture was largely a cottage, handicraft industry. This was, however, so wide, spread that a mechanical evolution was the logical next step. And it is significant that invention and development came from hands which were expert in the manipulation of the spindle and the loom.

The first of the humble geniuses was John Kay of Bury, inventor of the fly shuttle. His invention raised a storm of indignation. The cottagers saw in the machine a menace which was not wholly lacking. John Kay's fly shuttle not only marked the beginning of the mechanization of England's textile industry; it also inaugurated a mad fear of all mechanical devices. Kay's life was threatened; he fled for safety and died in poverty.

He was followed by John Wyatt's invention of the roller frame. And Wyatt was followed by James Hargreaves and his tremendously important spinning jenny. The storm which had engulfed poor Kay also struck at Hargreaves. A mob broke into his house, wrecked his machine and drove him out of the textile section to another city, where he secretly built jennies for the more progressive manufacturers able to cope with labor troubles.

Hargreave's invention heralded the greatest single figure in the development of England's cotton industry — Richard Arkwright, the father of the cotton mill, who "grouped in one unit all the most advanced devices for spinning cotton yarns and welded them into a factory." Arkwright began life as a barber; he perfected his machine and patented it; he associated himself with wealthy partners; and he died a millionaire. Laborers' protests against his mechanical contrivances were unavailing; with Arkwright, the machine age had come to stay.

So that Samuel Crompton found a prompt acceptance for his spinning mule—so called because it embodied features of both Hargreaves' jenny and Arkwright's horse power frame. It was the first successful machine for spinning fine yarns strong enough to weave into lighter fabrics suitable for the best calicoes.

Edmund Cartwright, with the first, not very successful power loom in 1785, completes the Eighteenth Century picture. Thereafter the stage was set: cotton, a minor character heretofore, was to enter the Nineteenth Century in a major role.

ANDERSON, CLAYTON & CO.

HOUSTON, ATLANTA, NEW ORLEANS, BOSTON, LOS ANGELES, CHARLOTTE, LITTLE ROCK, OKLAHOMA CITY, NEW YORK, MOBILE, MEMPHIS

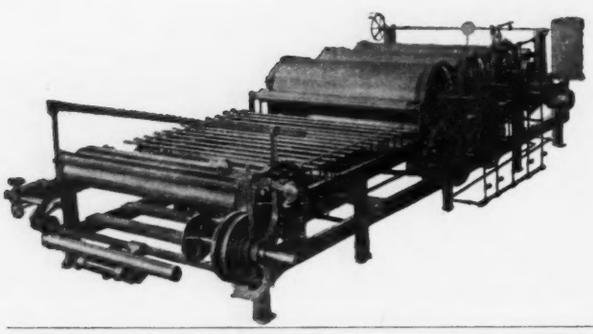
1. *Reduces sizing costs.*
2. *Eliminates seconds.*
3. *Gives absolute control of stretch.*
4. *Has individual cylinder temperature controls.*
5. *Operates up to 32 yards a minute.*

20% GREATER LOOM

PRODUCTION without a single loom or hour added!

Mill studies show that one of the chief losses of time in weaving synthetic yarns are stops for tying up broken ends due to overstretched and baked yarn during sizing.

The multi-cylinder "Johnson" practically eliminates these two sources of loom stoppage and enables you gradually to increase the heat applied to the warp and then taper it off—the ideal method.



Stretch is easily controlled and may be varied from zero to any percentage required.

If you want to increase your loom production 20%-25% without adding a loom or an hour, send today for free illustrated folder.

A manufacturer recently sized an approximately 8300 end, 75 denier, acetate yarn warp, 1200 yards, on a "Johnson" without having a single end break.

CHARLES B. JOHNSON
PIERCY and HOLSMAN STS., PATERSON, N. J.
REPRESENTATIVES
Joseph Barnes, New Bedford, Mass.
Carolina Specialty Co., Charlotte, N. C.
Elbrook, Inc., Shanghai, China

DRONSFIELD'S PATENT
"ATLAS BRAND"
EMERY FILLETING

"The New Flexible" "Needs No Damping"

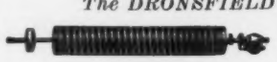
Stocks in all the leading Mill Centers

TRADE MARK ATLAS

The Standard Card-Grinding Medium

GUARANTEED "A" QUALITY
THE ONLY QUALITY WE MAKE

Used the wide world over, like
The DRONSFIELD CARD-GRINDERS



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Principal
Mill Supply Houses
Sole Agents for Dronsfield's Machinery for U. S. A.:—
John Hetherington & Sons, Inc.
250 Devonshire St.
Boston, Mass

UNIVERSAL
STANDARD RING TRAVELERS
BEST MEET THE SPECIFIC REQUIREMENTS FOR SPINNING AND TWISTING

THE BOWEN PATENTED BEVEL EDGE TRAVELER
VERTICAL OFFSET TRAVELER
FOR
EVEN SPINNING AND TWISTING
VERTICAL NE-BOW TRAVELER
FOR
SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

Write For Samples And Particulars.

U. S. RING TRAVELER COMPANY
PROVIDENCE, R. I. GREENVILLE, S. C.
AMOS M. BOWEN
Pres. and Treas.
Southern Sales Representatives
Wm. P. Vaughan, Greenville, S. C.
Oliver B. Land, Athens, Georgia
Torrence L. Maynard, Belmont, N. C.
"A TRAVELER FOR EVERY FIBRE"

the settings given on the flats give us better work and we know that these are being run on fine work with good results."

I think here this man is drawing on his imagination. He should set all of his stands on a 10-gauge, which he says he has except the front which is set to a 17—or, in other words, the stands should all be the same regardless of what number gauge he uses. Why? Because the fibers when taken away by the cylinder from the licker-in and carried under the flats to be cleaned and straightened do not pass as a whole onto the doffer at the first revolution of the cylinder, but are carried around perhaps many times; this repeated passing beneath the flats gives the greatest proportion of the paralleling that is found in the fibers after they are deposited on the doffer. Then if a good portion of the fibers are carried around several times by the cylinder before they are deposited onto the doffer, it looks reasonable that all of the flat stands should be set the same to get the same cleaning effect at each stand.

My ideas are not given in the spirit of criticism, but I feel like the contributor might be able to profit by some of them. We as mill men differ in ideas and opinions.

CONTRIBUTOR NO. 6277.

"Weavers in the Back Alleys"

This man says that weavers should be in the front alleys. What is your experience and opinion?

EDITOR COTTON:

In "HOW OTHER MEN MANAGE" of the June issue of COTTON "CONTRIBUTOR NO. 6234" opens a very interesting subject for discussion, namely, "Weavers in the Back Alleys". So much has been written and said about this system, both for and against it, that a discussion of the subject should be of interest to every practical mill man.

In considering this much talked about subject, I think it is first necessary to determine whether the warp or the filling causes the most defects in the cloth and whether or not the most defects can be detected before or after the cloth is being woven. In my opinion, the filling, as a rule, causes the most defects in a fabric, and it is most certain that most of the defects can be detected after the cloth is woven, in fact, most of the defects seem to be first discovered on the inspection tables in the cloth room. Of course, some men will probably apply the old adage about "an ounce of prevention being worth a pound of cure". This would be all right if the prevention were complete, and not a small part of what we will have to cure later. It is beyond my comprehension how a system of having the weavers in the back alleys can produce anything but the poorest quality of cloth. The production may be higher at the cost of quality, but almost any system can accomplish this.

It does not seem logical to believe that whatever defects are coming up on the warp are the worst ones and should be given the most attention. "CONTRIBUTOR NO. 6234" mentions only two defects, namely, extra ends and lint from the warper. To catch these

November 3, 1886

we received our first order from a Textile Mill for

"Akron" Belting,

laps *sewed* with lace leather—No Waterproof Cement in those days.

Today we build a Waterproof Belt for every type of Mill Drive and *Guarantee Results.*

The Akron Belting Company
Akron, Ohio
Established 1885

Special Representative:
L. F. Moore, P. O. Box 174, Greenville, S. C.

Clean Top Rolls—Show Spinning Room Savings

Ordinary liquid oils drip and leak, they escape from necks of rolls and damage yarn and roll covers.

NON-FLUID OIL does not drip or leak, thus it eliminates these losses. In addition, it saves money on lubricant and labor cost by outlasting liquid oil 3 to 5 times.

Check these savings in your own mill. Write today for testing sample and full information.

New York & New Jersey Lubricant Co.
Main Office: 292 Madison Ave., New York, N. Y.
So. Agent, L. W. Thomason, Charlotte, N. C.
WAREHOUSES

Chicago, Ill.	Providence, R. I.	Atlanta, Ga.
St. Louis, Mo.	Detroit, Mich.	Charlotte, N. C.
New Orleans, La.	Spartanburg, S. C.	Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

Philadelphia *Felt Cloths*

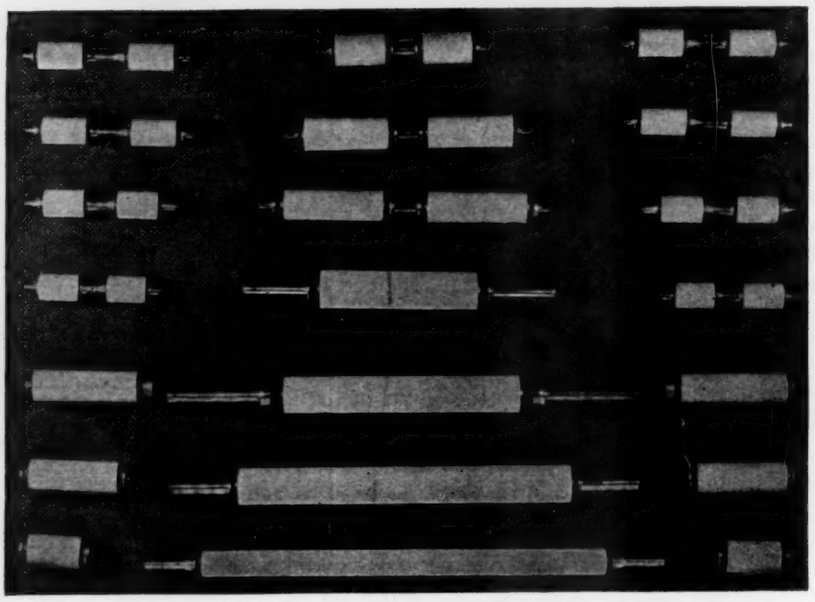
PROVEN IN SERVICE

DETAILS THAT COUNT

Because Philadelphia Felts are made from the finest of raw materials . . . because they are manufactured under the best of conditions, as to experience, men and machinery . . . because they are rigidly inspected—you are assured of getting the utmost in felt cloths when you specify Philadelphia.

Philadelphia specializes in Stamping Blankets, Palmer Blankets for Sanforizing and Lapping Cloth for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.



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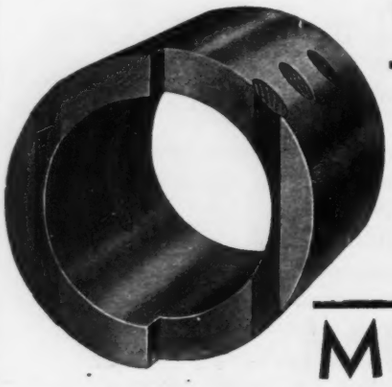

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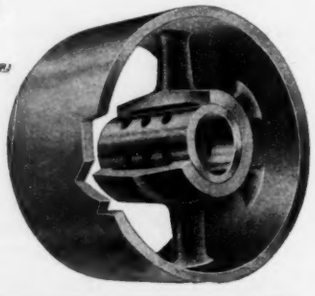

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two defects, which with a little care in the preparatory department can be almost eliminated, he is willing apparently to take the risk of getting into the cloth such defects as filling slugs, kinky filling, loopy filling, filling catching on the fork or broken and worn out picker, harness skips, mis-picks, broken picks, pull-ins, uneven weaving, open places, thick places, temple marks, loopy selvages, stringy selvages, warp floats caused by broken harnesses, reed marks, shuttle marks, creepers, wrong draws, cloth winding on take-up roll—and a multitude of other defects which can be seen only at the front of the loom.

The system of having weavers in the back alleys must also give the weaver more work, for if an end of the filling breaks, the weaver is not in a position to fix this and re-start the loom, and must walk to the front of the loom to accomplish this. Had he been at the front so much walking could have been avoided.

It is true that sometimes an extra end or lint comes up on the warp, but this should happen so seldom that it could be well ignored in preference to detecting other defects more frequently encountered.

Then, a good weaver is expected to keep an eye on the mechanical movements of the loom. He should see, too, that the shuttle is properly boxed, neither rebounding nor too quickly retarded; that the temples are set and work properly; that the thread cutter cuts and holds the filling, that the temple cutter cuts the filling properly; that the transferrer works correctly; that the filling fork lifts only every second pick; that the shuttle enters the boxes without slapping; should catch in time a worn out or broken picker and check strap, and notice whether or not the shuttle takes all three rings on the bobbin, and many other things which he should call the fixer for.

These mechanical faults cannot be seen very well from the back of the loom unless the weaver uses a periscope. Some men probably will say that the weaver is not always in the back alleys and can see these faults when he is at the front of the loom. Nevertheless, if we want to detect a fault most quickly we should place ourselves where the defect or fault is most likely to occur and to be seen.

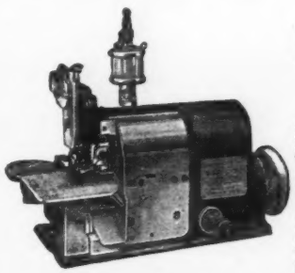
If there were placed on the market an automobile in which the driver's seat was in the rear, I would call it a crazy idea and steer clear of it. Similarly, I would do this with a system that would place anybody where he is most likely to miss things. However, there might be something in this system of back alley weaving that I cannot see through. If there is, it most certainly will come out in the discussion of this subject.

In conclusion, I wish to thank "CONTRIBUTOR NO. 6234" for bringing up this question and I hope that all other readers interested will take part in it.

I. M. (MASS.)

Most any young man just knows he can run the job better than his father runs it.

Be patient, young man. In a few years you will probably be trying to beat into a boy's head who calls you father, some of the same advice your dad is now trying to give you. Then you'll realize that the old man was not such a fool after all.—OLD-TIMER.



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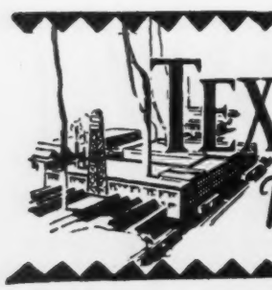

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The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor — Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps —Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co. Whitinsville Mass.

15. The Powers System of Thermostatic Control — "Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co. 2739 Greenview Ave., Chicago, Ill.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting —Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

59. Vat Colors and Their Oxidation—A revised edition giving information and methods of the dyeing, printing and Perborate of Peroxide "fixation" of vat colors. R. & H. Chemicals Dept., E. I. duPont de Nemours & Co., Wilmington, Del.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles — A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

65. Why Cooper Hewitt Light is Better Than Daylight — A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

70. Fafnir Ball Bearings for One-Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

75. The Facts About Armstrong's Seamless Cork Cots — A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork & Insulation Co., 923 Arch Street, Lancaster, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

78. Booklet L 1289 A—Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

90. Atwood Booklet—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

91. Illustrated Buyers' Guide and Catalogue—Of interest to every dyehouse executive, not only telling what dyehouse equipment is available in Monel Metal but also where to get it. The International Nickel Co., Inc., 67 Wall St., New York, N. Y.

93. Metso — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx—Eight-page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., Tioga, Thompson & Almond Sts., Philadelphia, Pa.

98. Saving Labor, Material and Power in the Textile Industry—A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

102. White and Light Shade Cotton Fabrics Dyeing and Finishing—National Oil Products Co., Harrison, N. J.

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106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk — Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. Some Properties of Starch and Dextrine—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

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114. Denman Parts for All Makes of Looms —showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

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117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

118. Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery — Pamphlets are issued on each of the individual machines. In writing indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

119. The World's Finest Sewing Machines —a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

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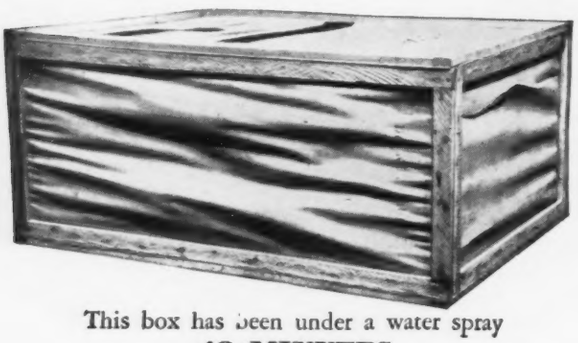

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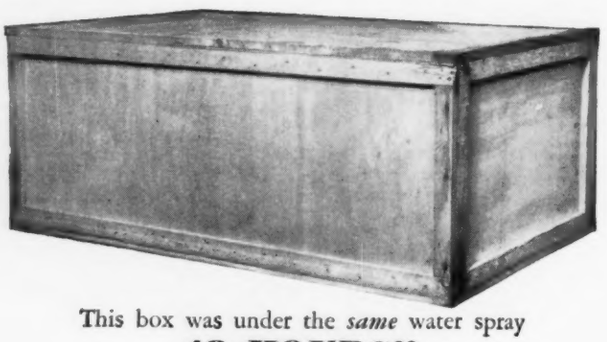

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Wants Discussion on Underwear Knitting

EDITOR COTTON:

For a number of years I have been a subscriber to COTTON, but must confess I have not been as good a reader of the magazine as I should have been. So now, to make amends, and in an effort to bring out other fellows in the underwear division of the knitting industry, I am going to submit some questions, which I hope other underwear men—practical men—will discuss.

Since the knitting business is such a big one and has so many angles to it, I think we practical knitters could get a lot of good from an exchange of ideas on how to run an underwear knitting room. I think the most essential part is the human end: man power or organization. Money will buy land, buildings, machinery, etc., but an organization cannot be bought; it must be built, and to my way of thinking, it must be built from good raw material, that is, with men of good clean moral character.

We have a room with more than 200 underwear type machines of various cuts and types, manned by approximately 75 men who, from sweeper to "boss", have learned all they know about knitting in this mill. Some of these men have been with us more than 20 years, some of our section men and fixers have been fixing and running sections for 15 years or more.

I have found in my experience that I can hire a man from the farm, with average intelligence, with no mechanical training—except perhaps sawmills, rockcrushers, etc.—and in four or five years time teach him the mechanical part of knitting to a pretty high degree of efficiency; but there is about one out of 50 who makes an efficient manager of help, or rather of men because I do not like the term "help".

Our room is divided into sections of approximately 50 machines each, with a section man in charge. He is the bell-wether of his section; he "bosses", fixes, sets stitches, teaches beginners, looks after the quality of the work and is responsible to the boss and his assistant for his section.

I would like to hear from some other underwear knitters on some of the following questions:

How do you go about training underwear knitters —that is, machine operators?

How do you pay them while learning?

What method do you use for keeping down bad knitting, that is, needle lines, drop stitches, and all classes of bad work for which the knitter is responsible?

Do you use any kind of a "dock" system?

As this is my first contribution, I will stop at this point. I hope some of the other fellows will respond with answers or further questions for discussion on underwear knitting.

CONTRIBUTOR No. 6283.

Left-Hand Versus Right-Hand Looping

EDITOR COTTON:

I would like very much to see in the "KNITTING KINKS" department a discussion as to the comparative advantages and disadvantages of right-handed and left-handed looping in a knitting mill. I would be glad to have this discussed by men in seamless as well as full-fashioned mills.

CONTRIBUTOR No. 6269.

More Figures on Full-Fashioned Seamers

EDITOR COTTON:

I am very much interested in the question from "CONTRIBUTOR No. 6185" with regard to seaming production. I will say frankly that our seaming department has always been quite a problem and we are very glad that this discussion has been started.

In conversation with other mills, we have always been under the impression that the production of our seaming department has not been what it should be. According to our records, the average production per seamer in a 55-hour week, is 120 dozen on a 4-thread number and 135 dozens on a 7-thread number. We naturally have some seamers who run considerably above this amount, but the average in the department, month-in and month-out, will approximate the above figures.

With reference to the needle breakage on the seamers, our records show that our average is one needle for every 50 dozens seamed.

CONTRIBUTOR No. 6190.

EDITOR COTTON:

I note the questions of "CONTRIBUTOR No. 6185" on full-fashioned seamers, and presume that he is operating a plant with experienced seamers. There is hardly a department in a full-fashioned hosiery mill

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that is subject to such great variation in production as the seaming department.

Our experienced operators on a seven-thread number seam four dozen per hour, and on a four-thread style about 3½ dozen per hour. However, it requires at least six months to a year before this production is reached. Again, we have observed that after a number of years this figure drops to a somewhat lower level, which is evidently due to a reaction from the constant intricate handling of hosiery on a high speed machine.

The second question regarding needle breakage we can answer to the effect that our average over a period of a year shows the use of one needle for approximately 160 dozen stockings. The writer is amazed to read that "CONTRIBUTOR No. 6185" should use a needle to every 20 dozen, and thinks that not enough supervision, on the part of the machine fixer in charge of the seamers, is given to the proper gauging of the needles in relation to the looper. Furthermore, the operators might not watch carefully for irregularities in the seaming thread clogging the eye of the needle and thereby causing unnecessary breakage. It is also advisable to use needles made by the manufacturer of the machine.

CONTRIBUTOR No. 6191.

Preventing Break-Outs on Full-Fashioned Etc.

EDITOR COTTON:

Please accept my opinion on the various questions regarding the knitting of full-fashioned hosiery which were asked by "CONTRIBUTOR No. 6091".

He first wanted to know what causes break-outs at transfer corners, and how this defect can be overcome. The chief cause for broken corners is due to the fact that the transfer bar topper does not completely place every loop upon the transfer stand before turning the corner. To better illustrate what I have in mind, I will go into detail regarding this very serious defect.

Everyone knows what is meant by "turning the corner" on a transfer topping stand. The operator is required to use a "loose courser" or "boner" as it is termed by some, to put a loose course between the second and third wales along the inside heel selvage of the leg, so that upon topping the instep, the heel tabs can be more readily placed upon the stands. It is while topping on the instep that the operator often becomes careless upon reaching the very last silk loops and fails to get the last two loops in the splicing (or heel-tab) upon the stand points before turning the corner.

As a result, instead of getting the needle loop, the loop is not there and only a half stitch is placed over the point. This happens largely on the left side of the leg, however, toppers are often careless when turning the corner on the right side, being neglectful about getting the last two loops in the splicing instep onto the stand points before turning the corner.

This condition, however, does not always cause a corner to break out, either upon being placed on the footing machine or being inspected, regardless of what type of inspection form is used, because, as has been said, there is a half-stitch placed on the stand points. At this point it should be explained that when the topper has the legs topped to the topping stand, the topper ravel courses are then raveled out and the ends cut on both right and left sides. If these ends are cut real short, this half stitch on the corner will break out much sooner that it will if a long thread is left after the ravel courses have been raveled and cut off. Therefore, one can readily see if this thread is cut real short in the topping operation, and the corner does not pull out, it will show a pull-out when the stocking has been dyed, finished and placed under pressure on the foot of the wearer.

The next question wanted to know how, with the trend of French heels in full-fashioned hosiery toward the narrower and shorter construction, this type of heel can be designed so as to retain the style advantage of the narrower width and yet give the consumer maximum wear under all conditions. To answer this question properly, one must take into consideration the type of instep required by the consumer. If the width of the instep has no bearing on the sale of the merchandise a heel can be very readily designed to meet the requirements, provided the maker has the proper Pointex equipment. By merely making the instep narrower and adding more steps to the French heel the desired result will be obtained. This then will not change the width of the high heel or French heel but will place the reinforcement at the friction point of the type of shoe and pump in question, at a point where the high heel and leg instep join. Naturally when more steps are added the courses between steps must be lessened correspondingly to the amount of steps added.

This man last asked what is considered to be the most important characteristic in a full-fashioned needle and how is the best way to test various lots of needles. I believe it would be of interest to all of us to endeavor to enlist the aid of the manufacturers of full-fashioned hosiery needles in this discussion. We too have difficulty in securing full-fashioned needles which are consistently of the same specification. The requirements from our point of view, however, is that the beard must be open .016-inch so that the needle can be used to meet the requirements of either mesh or plain work. We believe that the safest way to be sure that one has needles with the characteristics most suited to one's use is to get in touch with the person or concern from whom the needles are purchased and request a micrometer report covering the characteristics of the needles. Upon receipt of this report every shipment of needles taken in should be checked with the micrometer; and if they do not come up to the standard agreed upon they should be returned immediately to the manufacturer.

In order to determine whether the beard of the needle has the proper opening we use the following rule among our knitters: We formerly used the flat part of the needle which we slid along the groove of another needle to determine the exact opening between the point of the beard and the groove. We now use the width (back to front) part of the needle

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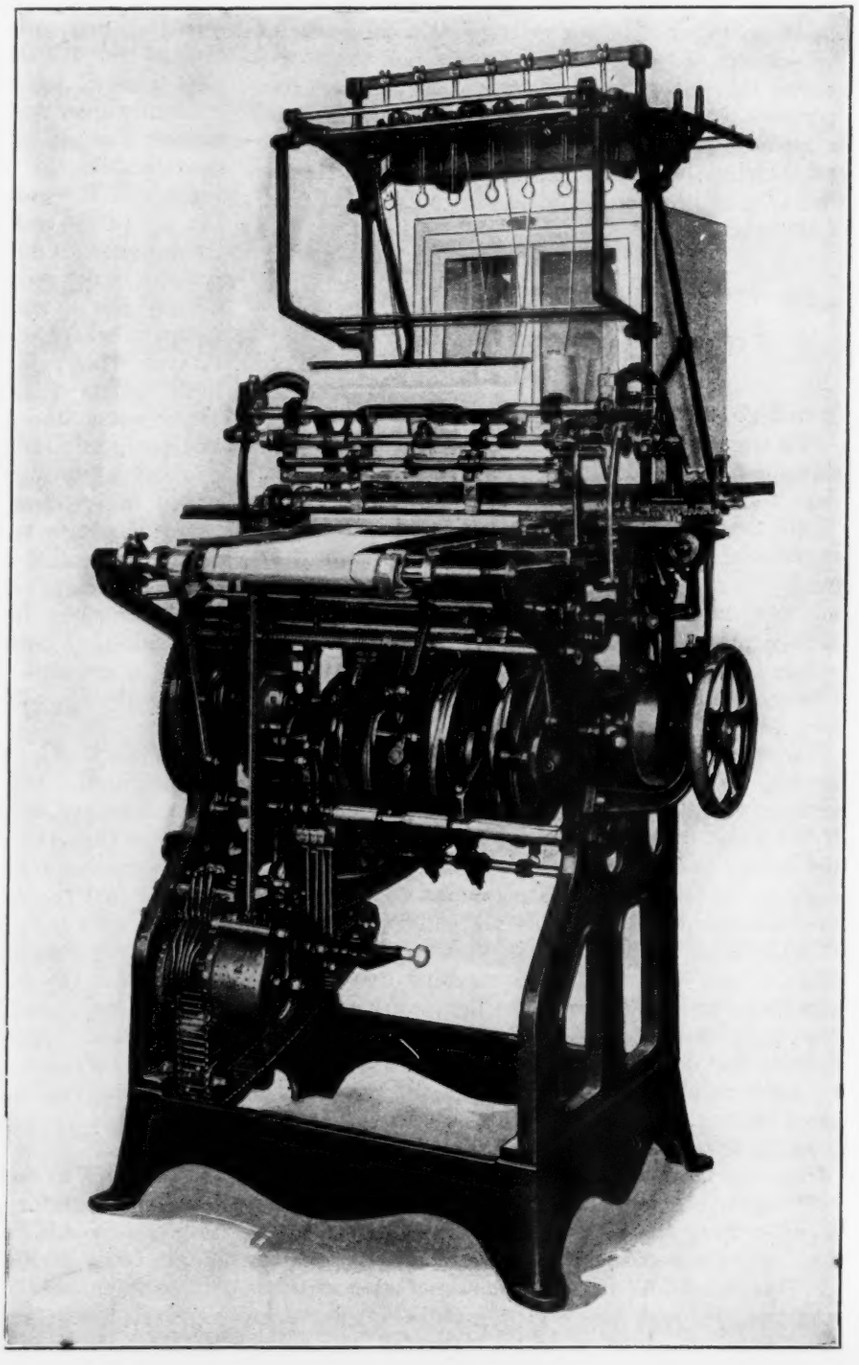

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to determine if the beard is properly spaced. In this way we are enabled to determine quickly if our spaces are consistently the same.

This holds true regardless of gauge. The full-fashioned hosiery needle, however careful one is, is a very delicate article. The tests given them cannot be made too carefully, particularly since almost every shipment varies. What is meant by this is that when one purchases needles he should try to purchase them from a manufacturer who purchases his wires from one source. We believe the needle-maker who does this practically guarantees uniformity in needles.

CONTRIBUTOR NO. 6129.

A Discussion of the Parts of Scott & Williams Knitting Machines.

Plates XVIII and XXII

(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturer's catalog with which all men using this make of machine are familiar.

The first article, on page 126 of the October issue, covered Plate I, Plate II, and Plate III; and the second article on page 86 of the November issue, covered Plate IV. The third article on page 97 of the December issue, took up the parts shown on Plate V. The fourth article on page 94 of the January issue, covered Plates VI, VII and VIII. The fifth article, on page 101 of the February issue, covered Plate IX. The sixth article, on page 73, of the March issue, covered Plates X, XI and XII. The seventh article, page 84, April issue, covered Plate XIII, and the eighth, page 89, May issue, described the parts on Plate XIV. The ninth article, page 81, June issue, covered Plates XV and XVI. The tenth article, page 97, August issue, discussed Plates XVII and XXI.

It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.

The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)

S. & W. Plates 18 and 22

EDITOR COTTON:

Plate 18 in the Scott & Williams parts catalog shows the needle cylinder and all other necessary parts which are used on machines of large diameter. Plate 22 shows a duplicate set of parts which are used only on small diameter machines, usually called B-3. The design of the various parts shown on the respective plates as well as their care and adjustment is identical. Two kinds of parts are shown on both plates, namely, parts for the Style 4 and Style 6 cylinders, usually called old style and new style respectively by machine fixers. The cylinders are identical, the difference being in the type of sinker, inside and outside sinker rings, and other parts.

Two types of cylinders are made by Scott & Williams, namely the solid wall and the inserted wall. The latter being by far the better, due to the fact that it is simple and inexpensive to repair a cylinder with broken walls. Solid wall cylinders usually must be discarded when the walls are broken.

One of the most vitally important factors in manufacturing seamless hosiery is to produce merchandise that is outstanding as far as workmanship is concerned. This does not imply that it must be high priced, but rather that it must be well made regardless of what kind of materials are used. Even the cheapest seller must be well made if it is to be a leader in its class. To accomplish this end it is very important that the needle cylinder and all component parts be kept in a good state of repair.

The Cylinder

The cylinder walls must be straight and free from rough and scarred places to insure smooth and free movement of the needles. Badly bent, loose or rough walls are bound to cause streaky fabric in addition to working a hardship on the needles and needle controlling cams. Straightening bent cylinder walls should be done with the utmost care. The long gradual bends are easily straightened, the short abrupt bends usually caused by needle butts striking against various cams or becoming jammed in the cam races present a more difficult task.

A common practice among machine fixers is to force a screw-driver between bent walls and pry them back into position. It may work in mild cases but when it comes to short, abrupt bends, more than a little prying is needed. Usually the short abrupt bends are not deep, that is, they are near the outer edge of the wall; a safe way to straighten them is to place a needle butt against the bent place and drive it back gently with the aid of a small hammer and a screw-driver or driving tool made especially for the purpose. It will be helpful to place a thin piece of steel between the walls behind the bent place so as to form a sort of foundation to drive against; this will also prevent driving the bent wall back too far or bending in the opposite direction.

Careful attention is necessary when removing broken walls and putting new walls in a Scott & Williams cylinder. The cylinder should not be overheated, merely gotten hot enough to make the solder flow freely, overheating will remove the temper in the walls. New walls should be polished and tinned with solder before they are put into the heated cylinder. Heating the cylinder preparatory to removing and replacing the walls can best be done with a torch that produces a small intense flame, heating only enough area to get the bad walls out, being sure to heat the cylinder evenly from end to end *on the inside.* Heating too great an area means more solder flowing and consequently more work and trouble getting the cylinder limbered up again.

When walls have been put in at several different places in the cylinder it will be very helpful to run the cylinder forward and backward when it is placed

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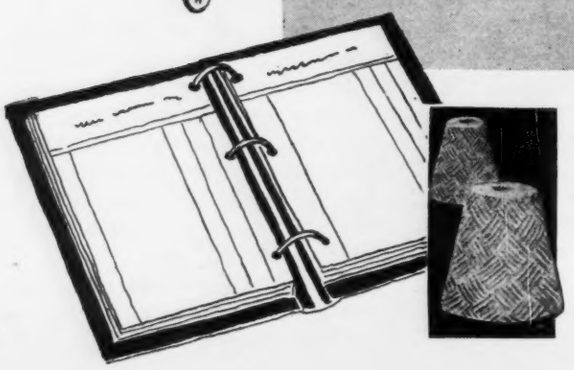

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in the machine for several hours and lubricate it well while it is limbering up.

Cylinders which have been repaired many times are often found to have humps or flat places which will prevent them from running true in the cam ring. This is caused by filing down the new walls which have been put in by hand. A better plan is to grind down the walls in a lathe using a tool post grinder and thus maintaining a perfectly true surface on the outside of the cylinder walls. When new walls are put in make sure that the ends are filed down flush with the respective cylinder surfaces; trouble will develop if they project at either end.

Excessive use of a slot file on cylinders which have been repaired is also harmful. Beads of solder are bound to form between the walls when the cylinder gets hot and they must be removed; it is safer, however, to scrape them out rather than file them out with a slot file, and thus avoid roughening smooth walls with a slot file.

Needles

For best results needles should be used as they come from the needle maker. No attempt should be made to increase or decrease the amount of needle friction. Uniform friction on needles is important and machine bent needles will certainly be more uniform than hand bent needles. At times under certain conditions it may be necessary to slightly increase or decrease the amount of needle friction in order to overcome minor machine troubles, but this should be the exception and not the rule.

Keeping needles straight so they will be evenly spacd and in a perfect circle is important on any type of circular knitting machine. Necessity compels the fixer on fine gauge Model K or HH machines to keep needles in good condition; they will simply not run satisfactorily if the needles are bent in every direction, nor will any other machine, for that matter. Excessive amounts of seconds and menders on transferred numbers are in most cases caused by badly bent needles, which make it not only very difficult but next to impossible for a knitter to make time in transferring and turn out a reasonable amount of perfect work. I have heard the knitting room foreman call the boys on the carpet for too much oiling, too much cam grinding, too much waste—but I have yet to hear the boss raise the devil because his fixers spent too much time straightening needles; no, quite the opposite is usually the case.

Inside Sinker Rings

Inside sinker rings play an important part toward producing well knit fabric and must therefore be kept in good condition. Constant running causes an accumulation of lint to pack in the slots of the inside sinker ring, between and around the sinkers. If such packing becomes severe it is bound to interfere with sinker action. Uneven and streaky fabric can easily be caused by a thin layer of lint forming in the bottom of the sinker slot and causing the sinker to raise upward and thus affect the stitch. The best plan in such cases is to remove all the sinkers and clean the inside sinker ring thoroughly. A very useful and handy tool for this work can be made of a piece of spring steel thick enough to fit into the sinker slot ¼-inch wide and 2 inches long, attached to a fiber or metal handle about 4 inches long (See sketch, Fig. A.)

Occasionally inside sinker rings will get damaged by broken needles, bent or broken sinkers, etc. Usually in such cases the separating walls will get badly bent and cause the sinkers to bind. They should be straightened carefully and particular attention should be paid to getting the walls evenly spaced. Style 6 inside sinker rings require more and closer attention in cases of bad needle smash-ups than Style 4, due to the small needle spacing nibs on the outside of the ring becoming bent or injured. Under normal conditions and with a reasonable amount of care inside sinker rings will give very good service and it is a good investment to renew them when they become worn or damaged. Until a few years ago both Style 4 and Style 6 inside sinker rings were soldered to the top of the cylinder. The newer types of Style 6 rings are now held to the cylinders with screws, and machine fixers appreciate this improvement as it has many advantages over the old soldered ring and none of its disadvantages.

Cylinder Spring Bands

Spring bands do not require a great deal of attention other than keeping them free from lint or grit so they can hold the needles properly. Very often fixers will try to overcome minor troubles by tightening the bands excessively, using bands of larger or smaller size, etc. Best results will be secured by using bands of the size and tension as supplied by the machine builders. In time the constant up and down motion of the needles will cut grooves in the bands; when this occurs they should be replaced as they are apt to break and cause a bad needle smash-up. Cylinder spring bands are not expensive, considering the amount of service they give; they should be replaced when they become worn, usually it is advisable to renew all three rather than mix new and used bands.

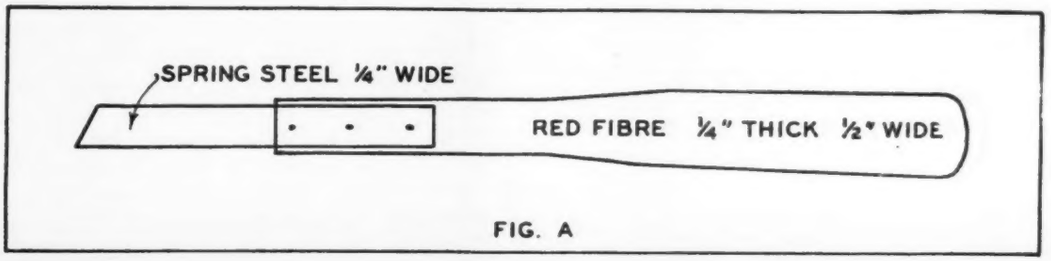


FIG. A

The Outside Sinker Ring

Outside sinker rings should be lubricated at least once each shift with a few drops of light oil. In locating an outside sinker ring, be sure that it rests perfectly level on the ledge of the cylinder walls so it does not wobble when in motion. The ring must also be spotted so the sinker slots in the outside sinker ring will be placed in perfect alignment with corresponding slots on the inside sinker ring. Failure to do this will cause the sinkers to bind and give various kinds of trouble such as streaky fabric, cutting holes, etc.

Tighten outside sinker ring clamps (7356) and screws (15577) securely so the ring cannot move once it is properly set. At times broken sinker butts or other machine trouble may cause the outside sinker ring to jam and stop the machine. Usually such mishaps cause the outside sinker ring to move and make the sinkers bind. It is best to test the sinkers after such cases to make sure that the ring has not been moved, thus avoiding future trouble. Early models of Scott & Williams machines were equipped with cast-iron outside sinker rings which gave considerable trouble in breaking the separating walls between the sinker slots. Rings made of cast steel have been in use for sometime and these give no trouble in this respect.

Double Sole Cams

The double sole cams are mounted on the outer edge of the outside sinker ring and consist of three separate cams, a leading cam (6375), center cam (6386) and rear cam (6397). The center double sole cam requires no attention other than keeping the holding screws tight. Leading double sole cams require more attention due to the fact that they carry a greater load in supplying the motion necessary to operate the double sole thrust-bar which lifts the double sole finger. The usual trouble experienced with leading double sole cams is that they become worn or cut up at the point where the double sole thrust-bar first strikes the cam.

Double sole cams are made of steel and case hardened. In time the hardened outer surface of the cam will be worn through by the action of the double sole thrust bar against it. The life of a leading double sole cam can be greatly prolonged if the fixer will remove, polish and re-harden the rounded point of the cam when it becomes cut up.

It will also be helpful to make sure that the prong on the double sole thrust-bar is rounded off so it will make a smooth contact with the leading double sole cam. This will also help to control the lifting action of the double sole finger.

Leading double sole cams should not be shimmed. If the double sole yarn does not come out at the proper place, adjust the double sole thrust bar or move the outside sinker ring around if the leading cam is of the proper length. If on a plain machine not equipped with a needle dividing cam, lengthen or shorten the rear double sole cam so as to make the sole yarn enter the needles at the desired points. Machines equipped with a needle dividing cam are also supplied with a tapered rear double sole cam. For such types of machines adjust the thrust-bar the same as for plain machines, the rear double sole cam, however, can be shimmed or thinned down so as to make the sole yarn enter the needles as desired. Rear double sole cams should be re-hardened when the outer hardened surface wears through.

The Sinker Cap

Sinker caps on Scott & Williams machines seldom wear out from ordinary usage. A few drops of oil every day is about all the attention they need, barring accidents or abuse. Plate 18 shows sinker cap (6163) used for the Style 4 and cap (5317) used for the Style 6 cylinders. There is very little difference in design of the right and left sinker cams, center sinker cams or sole slackening cams between the Style 4 and Style 6 parts. Likewise the function and adjustment of the various cams are alike.

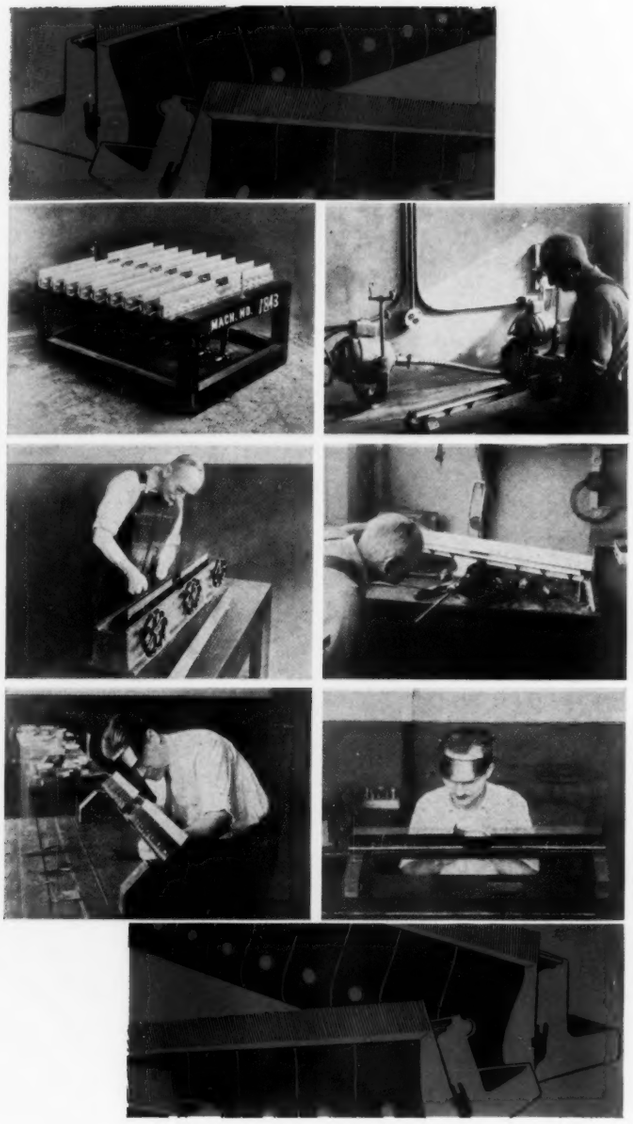
Sinker Cam Adjustment

Before attempting any radical change in sinker cam adjustment, it should be made certain that both right and left stitch cams knit exactly the same length of stitch, also that the right and left side cams are properly set. Detailed instructions for stitch cam and side cam adjustments were given in a discussion of parts shown on Plate 14 which appeared in the May 1933 issue of COTTON. Assuming that stitch and side cams are in good shape and properly set, also that the needles are straight, two factors are important in connection with sinker cam adjustment. They are, first, the depth of *distance* in of the right and left sinker cams and, second, the throw of the sinker cap or time at which the cams move the sinkers in. The whole theory of sinker cam adjustment boils itself down to a rule of perfect timing. This is done by setting the sinker cams so they will move the sinkers inward a given distance in relation to the needles and to time the sinker cams so the sinkers will come in, in relation to the needles coming up after the stitch or loop has been formed.

The old rule, which is correct, is to set the sinker cams so the throat of the sinker comes to the back of the needle as shown in the sketch on page 13 of the Scott & Williams parts catalog. This adjustment can be varied slightly either inward or outward, depending on the type of needles being used, whether forward hook or central hook. A great deal also depends on the kind of yarn being used. Setting the sinker cams for correct *distance in* should be done first. The second step is to adjust the sinker cap for proper throw or timing of the sinker cams.

Adjusting Sinker Caps for Proper Timing

The adjustment of the sinker cap for proper timing is a very simple one. It requires merely to turn the sinker cap set screw (15085) which rests against the down pick post to the right to bring the sinkers in sooner and to the left to bring them in later. The difficulty lies in knowing when the adjustment is correct in relation to the needle hooks coming up after the loop or stitch has been formed. A simple method of making this adjustment is to rack the machine



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ESTABLISHED 1866, TORRINGTON, CONN., U. S. A.

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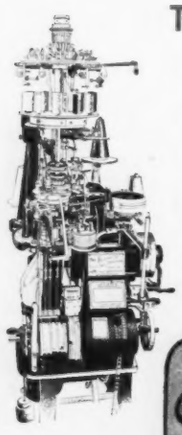
THE MACHINE . . .



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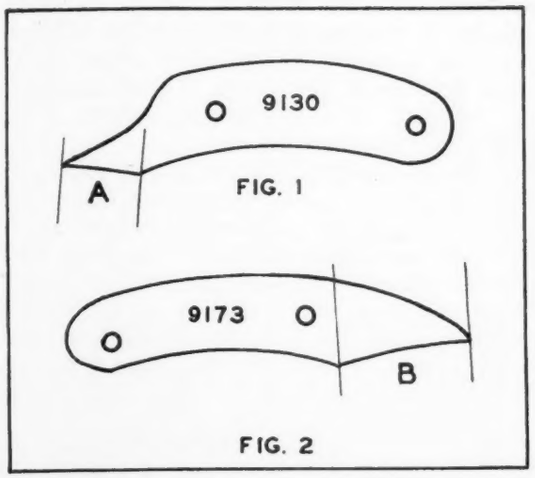

FIG. 1

FIG. 2

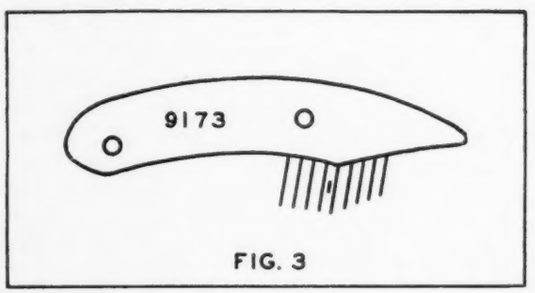

FIG. 3

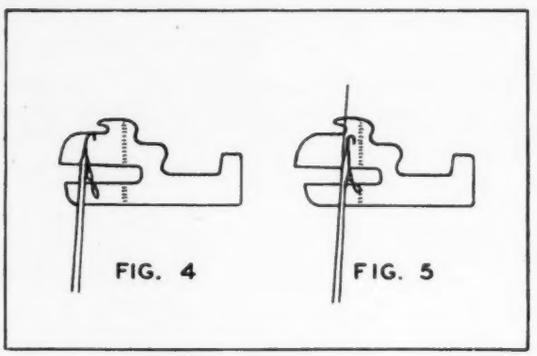
FIG. 4 FIG. 5

around to a reciprocating position with the latch ring raised and without fabric on the needles. Turn the machine slowly until the top of the hook of the first needle coming up from under the stitch cam (next to the needles in the elevated position) is even with the knitting ledge of the sinkers (Note Fig. IV). Then adjust the sinker cap so that one sinker will be fully in on each side of that needle. (Note Fig. III) The thing to be kept in mind in connection with sinker cam adjustment is that the stitch or loop should not be forced inward while it is being formed; however, as soon as the needle butt reaches the low point of the stitch cam the loop is complete, the needle then comes up and the sinker must be *in* far enough and *soon* enough to hold the loop off of the top of the hook of the needle or cast the stitch.

Many fixers try to even up the stitch in the heel or toe by advancing or retarding the sinker cap. It is only reasonable to expect various kinds of knitting defects if this practice is followed. The better plan to follow is to set the sinker cams correctly, then if an even stitch is not obtained, check up on the stitch cams and side cam adjustments.

Sinker cams should be slightly hollow ground for best results. (See Fig. 1 and Fig. II) A 5-inch grinding wheel will put a sufficient hollow in a sinker cam and it should be polished well after grinding. Refacing and polishing sinker cams at regular intervals is important, as the points will become blunt and the cam surfaces will become nicked. Nicked cams will cause sinker vibration, bring on various knitting defects and cause broken sinker butts.

Central Sinker Cams

Central sinker cams are not troublesome. They should be polished regularly and care should be taken in fitting up new cams so as to avoid projecting surfaces at the ends in order to prevent broken needle butts or unnecessary vibration. Frequently central sinker cams are subjected to much abuse by having the sinker spring bands on Style 6 cylinders too tight.

Double Sole Slackening Cam

Page 13 in the Scott & Williams Catalog shows a sketch of the sole slackening cam in an operative position. The amount of slackening needed is governed to a great extent by the size or count of sole yarn used. The innermost point of the slackening cam should come even with the point of the left sinker cam when it is in an operative position. (Note Fig. VI) The sole slackening cam should move the sinkers inward only as far as the left sinker cam does. It can, however, be set farther out than the left sinker cam and still slacken the sole sufficiently. The sole slackening cam can be made to come in the desired distance by adjusting the controlling plate (7040) shown on Plate 17. The slackening is accomplished by moving the high butt sinkers in earlier than the low butt sinkers. At times the fixer will find that the slackening cam is in as far as it will go and the innermost point of the cam even with the left sinker cam but it still will not slacken the sole sufficiently. There is but one remedy, the slackening cam must be made to move the high butt sinkers *in earlier*. This is accomplished by filing a deeper slot in the sinker cap where the slackening cam retaining pin rests and thus increase the area of the slackening cam which projects in front of the left sinker cam. It will then be necessary to grind off the innermost point of the slackening cam so it comes even with the point of the left sinker cam. (Note Sketch VI). The governing factor in making slackening cam adjustments is timing. The slackening cam can be made to bring the high butt sinkers in 1/32-inch, 1/16-inch, 1/8-inch

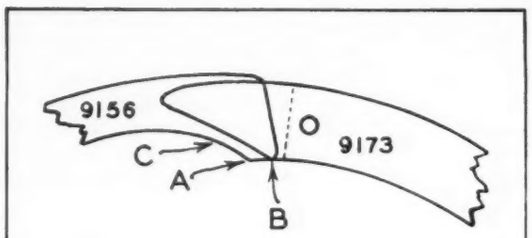

FIG. 6

(more or less) sooner than the regular sinker cam by following the instructions as given above, and the desired amount of slackening can be gotten very easily.

CONTRIBUTOR No. 6038.

Wants to Know About Treating Looper Points

EDITOR COTTON:

We would be very pleased to see in "KNITTING KINKS" some discussion from seamless or full-fashioned knitting mill men as to what lubricant or treatment of whatever kind they have found best for keeping looper points in proper condition.

CONTRIBUTOR No. 6268.

Handling Full-Fashioned Press-Offs

EDITOR COTTON:

Replying to the question of "CONTRIBUTOR No. 6253" regarding the best method of handling press-offs from full-fashioned leggers, I doubt if any satisfactory fixed rule can be established. I also know that there are different mills that dispose of this problem in different ways, and I would not criticize their systems as being wrong. Personally, I think the best method yet devised is to have the legger operator top his press-offs back on immediately on the following set after the press-off. I do not argue any economic value in this system. I think its best value lies in placing some penalty on the knitter for carelessness, which will cause him to be more careful about allowing his yarn to run out and cause unnecessary press-offs. To the contrary, someone might argue, especially under the conditions of the New Deal, that the operating time of the machine is necessarily lost while the knitter is topping the press-off back on is of more value than the waste saved. Such a position is certainly debatable.

We have tried the system of topping bars handled by the knitter himself and his press-offs topped on at his leisure and then transferred at the proper time. We were not at all pleased with the final results and discontinued the practice. On the other hand, we know mills which claim to be making a success of the system and are highly pleased with its operation. We have not known of mills using special toppers to take care of the press-offs and know nothing of how such a system works out in regard to paying the topper for this class of work.

Apart from the different systems enumerated by your inquirer, we know mills which have a system of backwinding all of their press-offs and using this silk for splicing yarn, and who claim to be highly satisfied with this system. We do not approve this system because of the fact that we think such a system encourages carelessness on the part of the knitters, and it also has a tendency to get yarns mixed up and produce more waste.

I think that the question can best be solved by the inquirer making a careful study of his own problem. It also depends on the type of yarns being knitted. He might be using rayon or a combination of rayon and silk with a small percentage of silk, and it might be advisable to consider press-offs as waste rather than try to make any further disposition of them so far as saving their value. Here again it would require very close follow-up or an unnecessary amount of waste would develop from carelessness.

To the contrary, if he is using high grade silk on 45-gauge machines or above, I would certainly recommend salvaging the press-offs by topping back on, and I believe that a system of shutting down the machine and topping the press-offs right back on the bar will be found just as satisfactory as any other system. It is a well known fact that wet silk oxidizes rapidly, and where press-offs are allowed to lie around even for a few hours and are then topped back on with any system and finished out with freshly wound silk, there will be a difference in the dyeing of the two different fabrics, that is, the press-off will not dye uniformly with the freshly knitted part of the finished stocking. Such merchandise will find itself in redyes and second quality which will cost as much or more than making waste at the start. On account of such developments through any process of accumulating press-offs to be topped on after considerable accumulation, we strongly advise the system of topping them back on direct to the bar on the next following set after the press-off, especially on 45-gauge and above.

CONTRIBUTOR No. 6260.

EDITOR COTTON:

I am very glad to answer the question of "CONTRIBUTOR No. 6253" with reference to methods of handling press-offs on full-fashioned machines. I will give you my experience with the various methods which I have tried out.

Whenever a legger operator has a press-off he always tops on a stocking in its place to keep from having to re-thread the carriers, which takes up more time than topping the stocking on does. This also keeps his press-offs worked up in fairly good shape all of the time inasmuch as it acts as a balance to top a stocking on whenever one presses off.

We have tried out the idea of having legger bars, but discarded them as too many of the stockings transferred from the legger bars were imperfect. We found that the stockings topped on by hand rather than the bar were much better.

When we used the legger bars, however, we made the knitters top on the stockings themselves rather than employing a topper to keep the bars full, because when you employ a topper to keep the bars full and charge the knitters according to their press-offs, you have some complicated bookkeeping on your hands.

We require each operator to keep his own press-offs worked up, and we usually set aside a period on Saturday morning in which the operator must top all of these stockings if he has a full set. If an operator does not have a full set, however, he continues to run until a full set is accumulated.

As you know, a great many press-offs are accumulated by the footers ruining stockings and stockings being ruined in other operations. We have a girl to cut these stockings off and put them in sets of even

lengths; these are distributed evenly among the operators and when they are topped on, the operator is paid the regular piece work rate for the dozen.

We find by the simple method of requiring each operator to keep his own press-offs worked up and by distributing evenly the press-offs accumulated through stockings being ruined in the operations, this is a very effective method of keeping the mill clear of bad work.

CONTRIBUTOR NO. 6256.

EDITOR COTTON:

In reply to the questions of "CONTRIBUTOR NO. 6253" with reference to handling press-offs on full-fashioned work.

It is always advisable when possible to top on a press-off as soon as possible in order to complete the stocking with the same lot of silk to avoid color change at the topper line.

We find in recent months that there seems to be a greater variation than normal in the dyeing characteristics of different lots of silk. We make dyeing tests on each lot of silk to see if the different lots will mix, i.e., we knit a set of legs part of the way with the current lot and finish it out with a set of the new lot and then dye up the set to see if it will dye two shades. We seldom find two lots that will mix well enough to dove-tail one lot into the other. It is necessary to knit each lot as a separate unit and foot the legs of a given lot with the same silk.

For this reason it is not practical to accumulate legs over a period of time to make full sets.

Our method is this: When a knitter has a press-off, he hangs the stocking on his knitter bench to use at the first opportunity to replace another press-off. Oftentimes the knitters will borrow a press-off from another knitter on the same style to keep the extra press-offs to a minimum.

Before changing onto a new lot of silk all press-offs are collected and made into sets.

We have three lengths of press-offs, viz., welts, legs through the calf narrowings, and legs to the high spliced heels.

Waste from the looping, seaming and inspecting departments is raveled back to these respective lengths and topped on in sets. In this case there is a combination of many lots of silk and the added new section of the leg usually dyes a different shade and the majority of these topped on sets go into the seconds for this reason.

We have no legger bars for topping on press-offs, and with our system of topping-on individual press-offs to replace a press-off we have no need for bars.

In the case of full sets of press-offs two or three knitters will help with the set and get it topped on in just a few minutes.

In the case where legger bars are used and put on by toppers, it appears to be only fair that the knitter pay the topper for the work he is supposed to do.

In the case of returned sets from the inspecting department, we have these raveled back ready to be topped on and pay a special rate for this work. The knitters do not mind running these sets since by getting help from their fellow knitters they make more money on topped-on sets at the rate than they do on regular work.

Where the press-offs are made necessary because of dropped stitches or narrowing holes, this waste is back-wound at the back-winders, each endage kept separate, and this back-wound silk is re-knit into legs. The production from back-wound silk is usually graded as irregulars or seconds.

CONTRIBUTOR NO. 6257.

Preventing Accumulation of Odds in Finishing Department

Another answer to the inquiry on this important problem in the pattern mill . . . . . .

EDITOR COTTON:

The problem that "CONTRIBUTOR NO. 6140" presents when he asks for methods of preventing odds from accumulating in the finishing department prompts me to tell for your "KNITTING KINKS" department, from which we have secured much valuable information along different lines, the method which we are at present using for this purpose.

When our knitting order for one pattern or style is completed in the knitting room, every dozen of firsts, seconds and odds are sent through the dyehouse and boarding room, with no odd dozens to come straggling into our finishing department later on.

The pairers go through the firsts, culling out the imperfects and the mends, pairing the remainder for stock. One mender sits at a table between two pairers. Stockings to be mended are laid on the mender's table, repaired and returned to the pairer before the bundle is completed.

This is quite contrary to the systems of some mills where the mends are tied out into separate lots and taken to a mending department. When the mended lot is paired under this system you will have a solid lot of mends for some customer, with remaining odds. Our system eliminates such handling, gives pairers the repairs stockings back in tie to have them evenly distributed throughout the bundle, and prevents odd stockings coming from menders.

Unless an immediate order of this one style and pattern is expected to follow, the odds remaining from the entire lot that is now in the finishing room go to irregulars. If more are to come later in the same style and pattern, the odd unpaired hose are boxed and held. Our theory is that we profit more by selling the few odds as irregulars than we would gain by creating a miscellaneous pattern inventory, to be dusted and re-handled for months and finally disposed of at the price of seconds.

Odd stockings that cannot be mated for various reasons are accumulated by some mills and dyed black, to be sold as seconds; but we consider the price of stripping and re-dyeing too expensive, and rid ourselves of the few odd stockings left after a complete pattern passes the pairers by grading them as irregulars—with three stockings in the last pair if necessary.

CONTRIBUTOR NO. 6210.

THE KNIT GOODS MARKETS . .

THE hosiery trade goes into the final fall months this year placing dependence on holiday orders for strengthening the price structure. Buying for jobbers and retailers has lacked snap since September. Injection of more snap, it was realized, was necessary for maintaining prices. It was a widespread fear that the results from the efforts of manufacturers to protect their market for the late December business might not be felt until perhaps well along in November, which obviously accounted for a considerable slowing down in output at some of the larger full-fashioned plants in October, while most seamless mills were well engaged and numbers of the smaller, more flexible full-fashioned were operating to capacity and, apparently, selling production of the coarser gauge goods, at prices in a range of $5.25 to $7.25 a dozen.

Price maintenance in hosiery, in a drooping silk market, was likened to pulling against the tide. Raw silk having declined by 50 cents a pound since the latter part of July, more than one-half of this loss being sustained since the 1st of September, there necessarily was placed in the hands of buyers a lever for prying hosiery prices from the levels established following the increases in cost chargeable to the operation of the National Recovery Act. It is pointed out that the surest way to prevent a slipping in hosiery prices at this time is to clamp the lid tight on production.

According to a bulletin of the Silk Association of America, approximate deliveries of raw silk to American mills, all consuming classes, in September aggregated 31,185 bales, which compares with 59,694 bales in the corresponding month of 1932, and 53,819 for the 1931 September. Deliveries for the nine months to September 30 were: 1933, 379,125 bales; 1932, 415,612 bales; 1931, 439,144 bales.

The sharp decline in prices for raw silk are ascribed to strikes tieing up a large part of the broad silk industry.

The directing head of a limited chain of retail hosiery stores established in and near Philadelphia had a most expressive way of telling a small group of business heads how, in his experience, the higher prices for women's silk full-fashioned affect sales, cash returns and employment of saleswomen. "As you may know," this veteran distributor of stockings over the counter said, "we have two prices on which we depend for volume. One is 69 cents a pair and the other is 79. Each has been increased by only ten cents a pair, yet, while we find a little more money in the cash register, we do not have quite so many customers and do not sell quite as many pairs."

The hosier, who recently was also a manufacturer, having a financial interest and a share in the management of a mill producing a part of the hosiery sold in the ten chain stores, declared that from observation and noting the comment of women, it was not so much the moderate advances in the prices that influenced them to buy more sparingly, as it is a general resentment that the increases should have been made while so many persons were out of employment because unable to find it and thousands of others idle due to strikes.

"By paying attention to their comment, I found that customers saw strike pickets patroling approaches to factories, offices and stores and were fearful of increasing idleness and perhaps need for economy in dress," the chain store executive said. "And some were impressed by seeing we had reduced our sales force in some of the stores, this action being taken where we found we were having fewer customers. I can see that it may take some time for customers to catch up with the spirit of the times and for the stores to adjust their management to the changes under NRA for effecting recovery in industry."

This somewhat obscure hosiery man accounted in a few words for the slowing down on production in numbers of hosiery mills and continued low prices in some leading establishments, all of which ties in with the reports of startling increases in cancellation of hosiery orders as early as August. Chiffon weight silk full-fashioned stockings described by a dependable well known department store as "45-gauge, all silk picot tops, lisle lined, silk plated soles, reinforced silk French heels irregulars of $1.25 quality," were offered for 55 cents a pair. Service weight pure silk with lisle garter hems and cradle soles and silk plated French heels, first quality, were offered in abundance for the same price and of course eagerly snapped up.

At 55 cents, it was noted both descriptions presented an economic appeal when service was considered. Offerings of this character necessarily may be expected to have a reflex in lessened sales of two and four-thread silk stockings at 69 and 79 cents. Dealers state it is easier to sell irregulars at near the prices for first quality since prices have gone toward the stars, and among a considerable element of shoppers, say store heads, even the hitherto "defamatory" stamp "Seconds" has lost much of its bad odor.

Four-thread 45-gauge in the gray were offered quite recently, at a time when orders were not reaching mills in volume satisfactory, for $5.12½ a dozen. The price, finished, would put stockings of this description out of the 55 cent retail price bracket even for irregulars, considering the increased cost of retailing under the code minimum wage and store hours. But there appeared last month no lack of hosiery for special sales. One offering to receive some attention was of 9000 dozens of "close-outs in liquidation".

It was not overlooked in the trade that there had accumulated stocks in quarters where small holdings may be burdensome, and that supplies seemed to ex-

ceed consumptive demand notwithstanding protracted idleness among 36 full-fashioned mills in the Reading area. While there is felt no real assurance that strikes may not flare up in some or all of the mills, despite reported settlements, it was believed the chances at last accounts favored steady operation of plants for virtually all of November and part of December.

One of the busier of the Philadelphia hosiery mills for some weeks—and still running and declining orders—is a well known establishment in which women's full-fashioned and seamless are produced. The seamless plant is operating to capacity for two 40-hour shifts. The owners some months ago sold a large part of the equipment, and retained the 240-needle machines only because southern manufacturers who acquired the finer gauge refused to pay the asking price. However, the management states they are receiving very satisfactory prices for their silk seamless and that for once the operatives are equally satisfied with their earnings.

The full-fashioned division of the mill is keeping only a part of the machines going steadily for a single shift. But prices are reported on the basis of the list of the Berkshire Knitting Mills as to 42-gauge goods. The mill could increase and sell its production of 42-gauge were the management willing to accept offers of buyers going about among the mills in search of soft spots in the market for coarse gauge knit for prices conforming to the notions of buyers for some of the department stores, and others as well. Quotations on four-thread 42-gauge have been in a range of $6.50 to $7.25, and buyers of course aim to get their orders on the files of mills on the soft side of the range.

Among the mills holding for $7 for standard 42-gauge is a small concern which reports sold up to the middle of December. This gauge has sold for about the lower prices obtained for 45-, four thread in instances, when the latter was not immediately obtainable.

A distributor of hosiery to large retail stores was in receipt recently of a carton bearing a printed label "Pettiflaw", which is interpreted as another name for irregulars in which the flaws are of only a petty character. The carton contained samples which had been returned to the wholesaler distributor, who relates that he despatched the samples by airmail and enclosed 60 cents for return postage. They were returned by parcel post at a cost of 15 cents, leaving the party returning them ahead of the game by 45 cents as a profit on samples submitted only for his inspection.

Accepting the proposal that business depression serves to give spur to invention, it may be expected that the hosiery industry will not be overlooked in this respect, in the matter of both machinery and style factors. Among knitting machine manufacturers there is a conspicious element that professes to believe the next important mechanical development in full-fashioned hosiery mechanics will be the application of the single-unit principle to the Wildman company single head machine. While reports that the idea already is being worked out by inventors are not confirmed, persons in the trade who have discussed them are inclined to believe such really is the case. That it is not a nearby prospect, however, is held as indicated by announcement that a company is being organized to operate a plant of Wildman single head machines of the legger and footer type as shown at the exhibition this year.

James A. O'Connell, formerly for a number of years operating in Philadelphia as the James A. O'Connell Co. in the manufacture of women's seamless knit hosiery, states he expects to soon complete organization of a corporation to employ Wildman machines. It is proposed, he states, to start with a capital of $30,000. Since discontinuing the manufacture of seamless stockings, Mr. O'Connell, trading as the Marion Hosiery Mills, has been engaged in the distribution of full-fashioned. The time seems not to have been propitious for launching the enterprise, and he decided to return to the production field, the intention being to manufacture the ringless-silk type exclusively.

The Ringless Situation

According to manufacturers maintaining close personal contact with buyers for large retail outlets, there is an opening for guaranteed ringless at around $11.50 a dozen for a high grade stocking designed to pass over the counter for $1.50 a pair. It appears, however, that there is to be no lack of offerings of hosiery of this character, for it is understood the Textile Patents Corporation has brought together the several interests controlling patents for knitting ringless hosiery and that this type of stocking may be the subject of a drive under a controlled plan that may be announced shortly, by which the line will be clearly drawn between definite quality and "this, that and the other" for the more generally price trade.

The Oscar Nebel Co., Inc., Hatboro, Pa., quite recently introduced in some of the leading stores what is generically described as a stocking with flexible foot. Without the use of elastic yarn, it is knitted in a manner by which it partakes of the stretch of ribbed fabric. The innovation is, of course, in women's full-fashioned.

Using, for illustration, a stocking of any given size, the foot has a yield in dimensions, under pressure, equivalent to more than a half inch in the length, according to the claims of the Nebel company which has had the construction subjected to such tests as would seem to make such claim tenable. The sole spreads somewhat under the weight of the wearer, and it appears that the fabric adjusts itself to any ill-shapen part of the foot, resuming its shape, and size to which knitted when relieved of excessive pressure and after laundering, it is stated.

Coming on the market only a few weeks ago, this latest development in women's stockings, for which a patent is pending, was priced one dollar a pair for four-thread silk 42-gauge and $1.65 for 48- gauge, both numbers of all over silk.

Cancellation of orders is something not banned by the NRA code of the hosiery trade, according to the reports of 336 mills to the Department of Commerce for August, when the cancellations totaled

401,735 dozens, or 9.6 per cent of the orders booked during the month. The cancelors used their prerogative especially freely in relation to infants' socks, to the extent, in fact, of over 41 per cent of the number of dozens booked. The next severe sufferer was the classification of boys', misses' and childrens, 23½ per cent of the month's bookings being represented in the cancellations.

Orders Cancelled

Repudiation of orders partook of freebootery in relation to men's half-hose and women's full-fashioned, while women's seamless were nicked to the extent of 13 per cent of the number of dozens for which orders were booked in August. The more startling revelation made in the reports of manufacturers for the month was an increase of 361 per cent in cancellations over August of 1932, and more than 100 per cent over July 1933. The per cent of increase was greater notwithstanding the orders booked were less.

The outstanding gratifying feature of the reports of the 336 identical mills as tabulated by the Department of Commerce is a showing of a material increase in unfilled orders at the end of the month, amounting to around 62 per cent, making comparison with August of last year. New orders declined from the 1932 August, but stocks in mills declined in about the same proportion.

Offsetting the gain in unfilled orders, complaint was heard last month of tardy specifications. Some of the full-fashioned mills producing moderate price goods reported capacity operation of plant necessary for filling the orders in their files, but in view of certain dealers withholding shipping details, production was curtailed. Dealers were alleged to be attaching too much importance to the declines in the markets for raw silks, making the weakness in silk a pretext for recalling their orders, in expectation of being granted a substantial rebate. It was a hard session for some mills and not over-profitable for many.

The effect of cancellations plus jobbers' repudiation of agreements to accept surcharges, taking this stand after shipment of the goods, is said to be quite a severe cutting into the estimated profits of not a few mills. A somewhat breezy controversy cropped out of the action of the jobbers complained of, with the result that by the time Earl Constantine, managing director of the National Association of Hosiery Manufacturers got a workable code for the hosiery industry through at Washington, he found himself crossing swords with the Wholesale Dry Goods Institute on the surcharge question while still having the footer-legger dispute on his hands. Signs of a speedy adjustment of the surcharge matter seemed to be fast ripening a few weeks ago.

It appears there is an element among the jobbing trade that sees or affects to see a "joker" in the surcharges of some of the manufacturers. The surcharge is assumed to cover actual increases in cost due to operations of the code under which mills may be operating. But, say some of the objecting jobbers, "the surcharge we are asked to pay some mills covers charges not actually sustained by reason of acceptance of the NRA code." "For example," said a jobber assuming to represent the sentimest of a number on the subject, "some of the manufacturers did not, under the old regime, include depreciation and obsolescence as an item of cost, and added it only when NRA made provision for additions to items previously figuring in their cost. Misses' ribs afford one of the better illustrations for making use of the joker," the jobber went on. "We were buying them for about 55 to 60 cents a dozen. Present prices show an increase of around 100 per cent. I know a great deal of the actual increase is in labor cost, and some of it in yarn. We feel that most of the rest of it represents something that the manufacturers were not including in their cost accounting before we switched to the NRA basis."

Manufacturer retorts to the allegations of jobbers in relation to surcharges cite the "volume" of cancellations of orders, notably in men's and children's lines. According to some primary market sellers, certain jobbers who had cancelled half-hose orders when prices were somewhat lower than at present, have insisted upon reinstatement of some, which were recalled when the surcharges were made to figure in invoices. This action of the jobbers complained of—demanding reinstatement of orders—was necessarily an unpleasant phase of the October dull session.

Radical changes in merchandising policies by two of the better known northern manufacturers of full-fashioned hosiery are likened by some primary trade interests to the oft-referred to mistake of swapping horses in the middle of a stream.

The Berkshire Knitting Mills, for many years distributing through jobbers and quantity buyers among retailers, tried the experiment of selling to retailers as their major outlet, and a few weeks ago surprised the trade with an announcement that henceforth its lines would be sold to jobbers through one sales organization and to retailers by another. This announcement was regarded as tantamount to an admission that distribution through retailers exclusively was not the ideal manner of disposing of its output after having first gone to the jobbing trade alone.

Several weeks ago, the Largman Gray Co., manufacturers, at Croydon, Pa., near Philadelphia, of Blue Moon brand hosiery announced discontinuance of its New York selling office and the appointment of Gus Edelstein Brothers & Co., as its distributors to the wholesale trade in New York, Pennsylvania and New Jersey. In this instance, jobbers are virtually handed a ready-made clientele among retailers, for the Blue Moon brand has been extensively advertised to the trade, and to the consuming public as well.

There would seem to be an advantage to the Largman Gray Co. in turning its retail trade over to a few selective jobbers in the principal distribution centers, since jobbers are believed to have more economical distribution than the average manufacturer. There should therefore, ensue an expansion in the company's distribution, according to some trade fac-

tors. Whether expectations are as likely to be realized when changes of this character are made during the present confused state of manufacturing, wholesale and retail business, as when effected under more nearly normal conditions, is questioned. especially by persons having experience with or recollection of a shifting of distribution policies.

Trends in Distribution Methods

In the opinion of numbers of primary market operators in hosiery, the change in selling plans made by the Berkshire Knitting Mills is likely to prove more of an experiment than the somersault of the Largman Gray Co. Old timers in the production of women's full-fashioned hosiery say very few manufacturers ever departed from their established distribution methods. The Durham Hosiery Co. is a notable exception. In the case of this company, it is pointed out, some little time was required for properly adjusting its trade to the then new order of things, but in the long run the Durham went forward faster after finally determining upon the sales plan which has been followed for many years without any change.

Limitation of the installation of machinery is provided for in the codes of only two textile industries, according to statements of builders of practically all types of equipment for the textile trades. The industries in which applicants for permission to install for expansion or replacement must justify their pleas to the National Recovery Administrator, machine builders declare, are those embraced in the Cotton Textile Institute and the Lace Institute.

In both cases the limitation provision is described as an amendment to the code as originally approved. It was incorporated as an amendment on petition of the directors or code authority of each of the Institutes. Which is viewed as a way having been left open for virtually like amendments to the Hosiery and Underwear Codes being asked and approved by General Johnson. Each of these latter codes. it is explained by persons speaking as representatives of the machinery industry, occupy the same position as did the Cotton Textile Institute and Lace Institute codes before writing into them the machinery limitation clause, and any code, even if already amended in some way, may be further amended.

"There are, I believe," said a hosiery machine builder, "20 amendments to the Federal Constitution, and it seems apparent there is no limitation to the amendments to any of the NRA codes that may be asked for." There is pending the petition for an amendment to the Hosiery Code, for a change in the regulations for operating footers and leggers, and that may or may not be provided for in the first amendment to the code, it was suggested in a discussion of codes so far as they may affect the near future of elements in the machinery industry.

It was believed by the commentators that limitation of installation of machinery under the underwear code was a nearer probability than a change in that respect in the hosiery code. But there was seen a sentimental trend toward limitation, particularly in view of a considerable installation of hosiery

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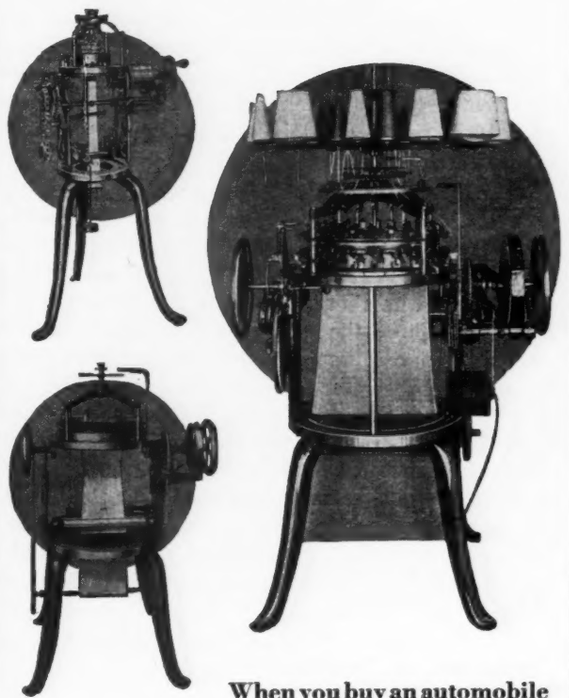

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Factories for the construction of full-fashioned hosiery machines, certain types of improved seamless machines for hosiery, and other knitting mill equipment are reported not only busy, but sold up of their output respectively to the end of December and, in instances, unable to deliver all of the machinery for which orders are on file. There is, therefore, a suspicion in some quarters, that petitions for so amending the hosiery and underwear codes as to virtually place a limitation on installation may make their appearance around the end of 1933.

Some machine builders have expressed surprise that certain knitting manufacturers have not already taken steps to seek advantage of the precedent established by the Cotton-Textile and the Lace Institutes. There is heard also amazement that manufacturers who it may be assumed might be adversely affected by limitation amendment to the hosiery code have seemingly taken no action for opposing such an amendment.

The present small hosiery manufacturer, it is suggested, probably would be seriously affected by a limitation on installation provision being added to the hosiery code. Assuming his plant were modern, he might not be able to convince the powers at NRA headquarters of the need for replacement or of a need for expansion, provided all the hosiery the market could absorb was already being produced. The large mill, on the other hand, with some machinery of an age that would merit for it a place among the antiques in some museum, might have not the slightest difficulty in getting permission to replace it with new equipment. If production in units is not to be increased, then, it is pointed out, changes would be such as relate to economy of operation, flexibility, etc.

As by the end of 1933 a great deal of full-fashioned machinery will have been installed in hosiery mills in the past four years, some far seeing manufacturers express a feeling that restrictions said to be under discussion such as now obtain in the cotton textile industry, may result in radical improvement in the efficiency and operation in all mills.

. Considering the interest that was manifest in spring underwear, even prior to the general opening in the first week of October for the 1934 season, manufacturers are at a loss to account for the feeble support since given to the market. There is a feeling, however, that the inauspicious start of the selling campaign might rightfully be laid to indecision in relation to proposed changes in the underwear code for fair competition.

The trade, as late as the middle of October, was waiting for the Administration to announce a decision whether the rayon tubular knit goods manufacturers are subject to the operations of the code as it was approved on September 18, effective October 2. Pursuant to application of various manufacturers of rayon knitted cloth the industry was given until October 16 to ask for a suspension of the provisions of the code if it were deemed inequitable, after a half of the month following the opening of underwear lines had elapsed—a period during which buyers were disposed to wait—and there were intimations that no decision would be forthcoming until along in November.

The controversy raised by the manufacturers of rayon centered around machine hours, since the requirements of the manufacturers of the cloth depend upon the demand from the consumers of the cloth putting it into underwear and a various variety of items and numbers of types of piece goods. This therefore might be viewed as one instance of traffic being held up by the neglect of manufacturers to take full cognizance of their code privileges and as limitations in advance of the code being formulated and approved.

In view of subsequent market happenings, it appears that the underwear opening was inopportunely staged. Seven days after manufacturers had shown their lines and named prices, the October cotton crop estimate was released, an indicated increase in yield over the September report precipitating a downward movement in cotton yarns and cotton goods. The October market therefore was against the brisk movement that had been forecast when all appeared headed upward and onward.

Also a factor recognized as not conducive to fall buying of spring underwear is the lift in prices since the preceding lightweight opening. Then too, it is pointed out, retailers are looking to their holiday business as a step out of the depression which came as an aftermath and as giving them an insight to consumer acceptance of the generally higher prices. Such are the arguments put forth in support of a prospect that spring underwear will mostly, be bought after the year-end holidays. Some large operators among jobbers in effect stated they were "not looking at samples lest they be tempted to place orders before they were ready to do so."

The two-season mills are not much upset over the delay in spring business as they are fairly well engaged with heavy weights, many of the orders for which were received late. The situation for manufacturers, assuming there will be a near approach in shipments this fall and winter to those of a year ago, may be indicated in a reported production by 121 identical manufacturers of 1,535,399 dozens in August, compared with 946,976 dozens in August last year. August shipments this year were, however, well in excess of those for the corresponding month of 1932.

Increased Demand

A considerable demand for 3½-inch cylinder Pigeon machines has developed, due to the increasing call for seamless hosiery, and it is expected around 300 such machines will be in operation in Philadelphia alone in November. Most manufacturers in quest of machines of this character prefer 300-needle type. Some years ago, a considerable number of these machines were shipped to Russia, not many, relatively, were sold, however, for the reason that owners refused to accept the pittance offered for them when it was felt thy had become permanently obsolete. Some that remain and soon will be in production are said to be equipped with Pointex heel attachments.

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REVIEW OF THE YARN MARKET

Philadelphia, Pa., October 17, 1933.

COTTON YARNS in October touched the lowest level of prices recorded since cotton and yarns were being marked higher preliminary to adjustment to code minimum wage rates and the processing tax. Comparing with prices obtained in some instances around the latter days of July, there had occurred a sheer drop of seven cents, figuring on rates prevailing as to 10s single on cones, by around the middle of October. Whether contract yarns have been called in during the steady decline is a matter of conjecture.

The sharpest decline in a given period followed during the week in which the Government crop condition report and estimated yield came out. The forecast of a crop of 12,885,000 bales, 471,000 more than was indicated in the report as of September 1, was of course a factor in a softening in the market for yarns. A second jolt in an already weakened market was the announcement of the government having decided on the biggest refinancing program since the World War—the calling in of $1,900,000,000 of a Liberty loan 4¼ bonds and the issue of 3¼ per cent bonds for their redemption. In the cotton yarn trade the opinion was expressed by some leading operators that fading hope of inflation had caused the sharp drop in wheat and that it was the scare in the wheat pit that dragged cotton to a new low for the NRA period to date.

By October 13, 10s carded yarns were quoted officially 27 to 27½ cents, and it was not doubted by some of the more important traders that an offer of 26½ for a sizeable lot for good account would be accepted. This sentiment prevailed in some quarters where it was thought the descent by that time might have been completed, but that some little time might be required to establish buying confidence, in view of conditions reported in the commodity markets generally. There developed a feeling that the sagging in wheat, cotton and cotton products in connection with a generally unsettled state of affairs would hasten a stiff announcement from Washington in relation to strikes, by which much of the fear that has held business in check will be dispelled.

In keeping with the division of yarn demand for some weeks, the most of it was said by dealers to come from the knitting trades. Weavers professed to be lacking a sufficient amount of business to warrant them taking yarns on a basis of 27½ cents for 2-ply warps. The carded list was soggy, from the finer counts to carpet twist. Underwear mills were calling in 16s to 26s single carded, and prior to the week of October 8 were in instances paying 38 to 40 cents for 30s single. Price disparity varied with the extent to which spinners needed business. The trade professed to see a better balance of output and consumptive demand in reports of some spinners trimming their production.

Combed yarn spinners seem to not have improved their price position, and it appeared that manufacturers were not eager to take advantage of offerings at less than intrinsic value. The spread between production cost and obtainable prices is particularly narrow in respect to counts in which labor cost is especially high. Single 24s combed peeler was quoted 40 cents and 16s two cents lower, buyers balking at both. At 45 cents, 30s were quite out of line. There has not for some time been a basis of differential to which traders were adhering.

By the middle of October mercerized yarns were described as the harder hit in the entire range of cotton yarns, and there came out reports of chiseling, 60s 2-ply being available in instances at 75-77 cents.

Philadelphia prices, including the processing tax, published October 16, follow:

Single Skeins

4s to 8s	27½	10s	28
12s	28½	14s	29½
16s	30	20s	31
24s	34	26s	35
30s	37		

Single Warps

10s	28	12s	28½
14s	29½	16s	30
20s	31½	26s	35
30s	37		

Two-Ply Skeins

8s	28	10s	29
12s	29½	14s	30
16s	30½	20s	31½
24s	34	26s	35
30s	37½	40s	47½

Two-Ply Warps

10s	29½	12s	30
14s	30½	16s	31
20s	32	24s	35
26s	36	30s	38 @39
40s	49		

Frame Spun Carded Cones

8s	28	10s	28½
12s	29	14s	29½
16s	30	18s	30½
20s	31	22s	32
24s	34	26s	35
30s	37	40s	46
30s double carded			39 @40
30s tying in			36

Carpet Yarns

8s and 9s white warp twist	27
8s tinged tubes	26
8s part waste	24½

Two-Ply Combed Peeler Skeins and Warps

8s-16s	35 @38	20s	41
24s	42	30s	47
40s	53	50s	58
60s	63	70s	76
80s	88		

Single Combed Peeler-Yarns on Cones

10s	36	14s	37
16s	38	18s	39
20s	40	24s	41
30s	44	36s	47
38s	49	40s	50 @51
50s	55 @56	60s	61 @63
70s	72 @74	80s	84 @86

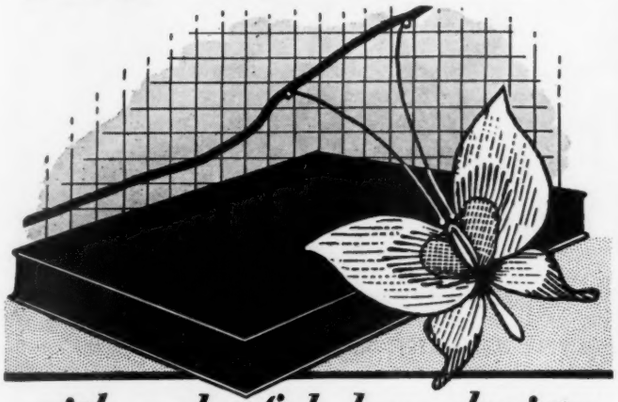
Mule Spun Carded Yarn on Cones

10s	33½	12s	34
14s	34½	16s	35
18s	35½	20s	36
24s	39	26s	40
30s	42	40s	51

Mule Spun Combed Peeler Yarn on Cones

10s	41	12s	42
14s	43	16s	44
18s	45	20s	46
22s	47	26s	49
28s	50	30s	51
36s	54	38s	55
40s	61		

Boost Your Sales Curve



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Colorful design in textile boxes as handled by Old Dominion is a sound step forward in increasing sales . . . for color by Old Dominion is scientifically executed to add a convincing note of quality—and a profitable eye-appeal to your package. Write nearest plant for samples, prices.

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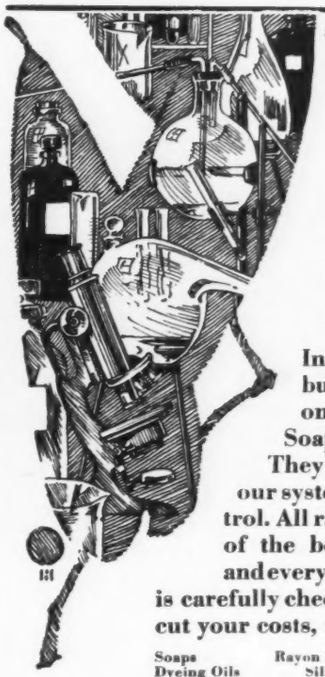

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Dyeing Oils — Silk Oils — Sulphonated Oils
Knitting Oils — Penetrating Oils — Hosiery Finishes
Fulling Compounds — Scouring Compounds
Softeners — Products for Specific Processes

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SHOWER OR SPLASH PROOFING

ARE EASILY PRODUCED BY ONE SIMPLE TREATMENT WITH

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How to SAVE
$50 to $200 A WEEK In Your CLOTHROOM
--and improve the quality of your fabrics

If you are using old, non-automatic shears, or hand picking your goods, we can show you a saving of from $50 to $200 a week—$2,600 to $10,400 a year—and improve quality through the use of Hermas Automatic Trimming Shears.

Clothroom wastes are particularly deceptive—don't judge them by the per yard cost, but by the gross payroll.

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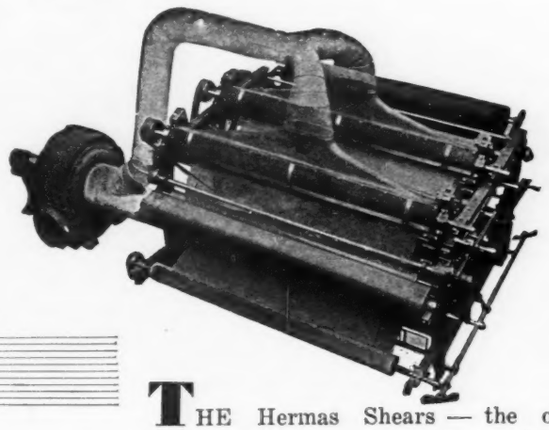

THE Hermas Shears — the only REAL automatics. Trim, clean all hanging strings, small loops, floats from selvages and both sides of fabric at 60 to 100 yards a minute. Cloth rests open automatically to allow passage of seams and shear WITHIN ONE FOOT OF THE SEAM.

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COLD WATER CONDITIONING FOR COTTON

A NEW HIGH *in Efficiency* at a NEW LOW *in Economy*

USE IT • with any conditioning machine.

IN COLD WATER • it can be atomized and distributed in place of steam.

MEON • prevents rust formation. Makes rust-proof bobbin rings unnecessary.

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An excellent hosiery dyeing and degumming concentrate, producing improved results at lower costs.

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Will improve your cotton warp slashing.

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American Dyestuff and Textile Oil Manufacturers. Established 1876

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● ***Produce finer lines--discharge whiter and cleaner---wash out easier---much higher concentration!***

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METSO
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WHEN you use Metso, sodium metasilicate as a kier assistant expect cleaner and whiter piece goods.

Get superior cleaning with the high wetting and detergent properties of Metso and so reduce the amount of bleach necessary.

Metso is pure sodium metasilicate, a basic alkali different from other cleaning compounds and alkalis. Write for details.

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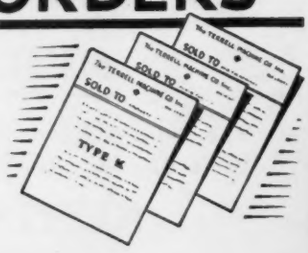

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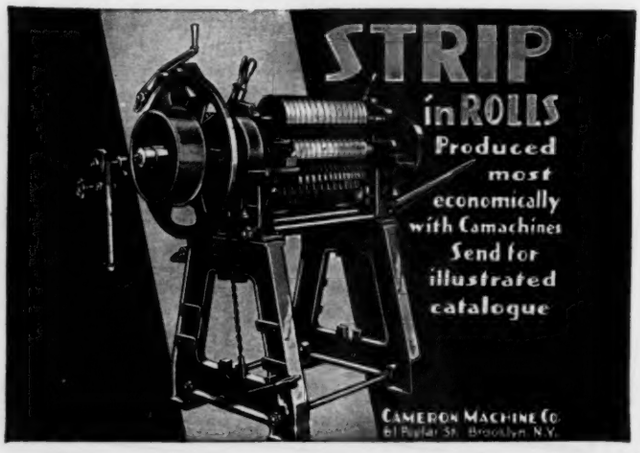

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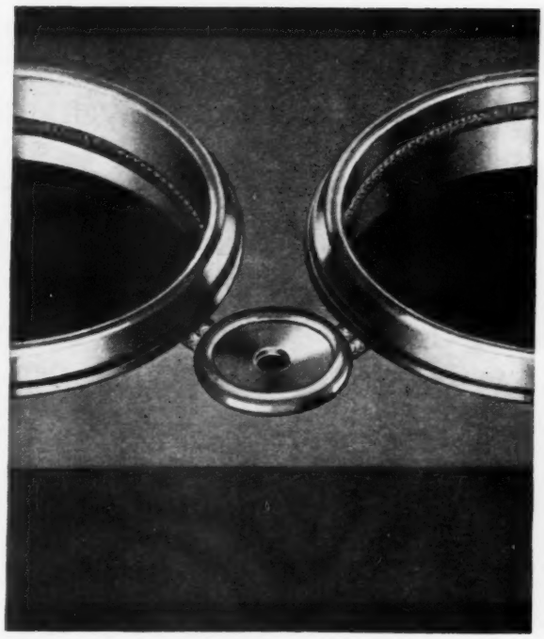

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Established 1868

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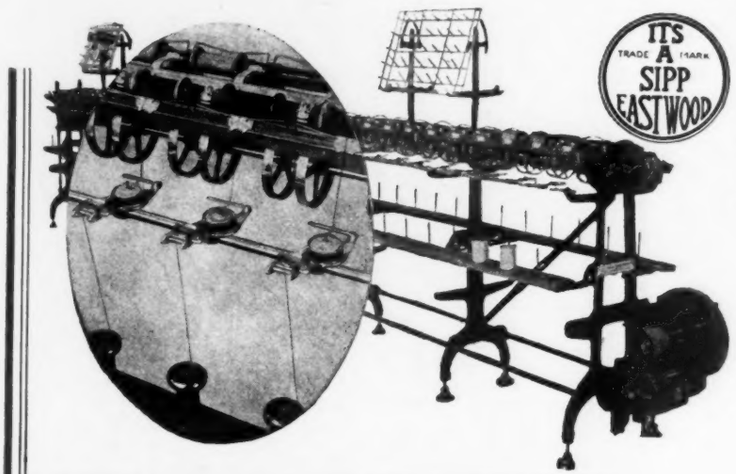
. . . Working on a unique principle

Yarn balloons off spool instead of revolving it—measures only 22" wide overall



Instead of spools revolving, as in former types of frames, in this redraw the TENSION DEVICE revolves. Yarn is delivered over end of spool. Tension, therefore, is applied to THREAD instead of to SPOOLS.

Operates at 1500 r.p.m. on the spindle as against 800 r.p.m. on former types. Actual production is about 3 times greater. Starts quicker, too, due to new tension, and to cork-head spindles which adhere better to pulleys than do wooden heads. New type piston traverse increases speed.

Unique tension prevents slackening of ends when spindle stops.

Take-up spindles revolve in patented, oil-less bearings; roller bearings are used for the motor drive instead of old type plain bearings.

Machine is more compact—only 22" wide overall. Besides increasing speed 50%, this redraw reduces yarn breakage and knots, produces better wound spools, and heightens warping and quilling efficiency.

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The new Sipp-Eastwood Redraw may also be used with a revolving spool if desired.

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Keen and Summer Streets, Paterson, N. J.

Manufacturers of high-speed warpers, over-end cone creels, oil-less bearing winders, redraw frames, quillers, re-beamers, edge warpers, and folding and measuring machines.

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A Lesson—or a Lickin'—in your Scrap Pile

Broken loom crankshafts in your scrap pile indicate an unnecessary loss.

Remedy the loss now—and get off with a lesson.

Do nothing about it—and continue to take a lickin'.

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They are made to overcome breakage—and they do it.

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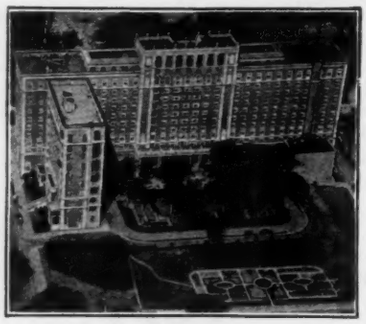
The Executive's Headquarters; the Football Fan's Haven!



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"Should say I have! It's quite easy to combine business and pleasure at the Biltmore, because the management is fixed for it."

"Yes, that is one hotel *located right* for both business and diversion."

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Single, $3, $4, $5
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MAIN DINING ROOM: Club Breakfast 65c and 85c. Luncheon $1.00. Table D'Hote Dinner $1.50.

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"The South's Supreme Hotel"

Value

When YOU Go To
PHILADELPHIA

600 ROOMS AND BATHS

A Room and a Bath For Two and a Half

$2.50 *Single with Bath*
$4.00 *Double with Bath*

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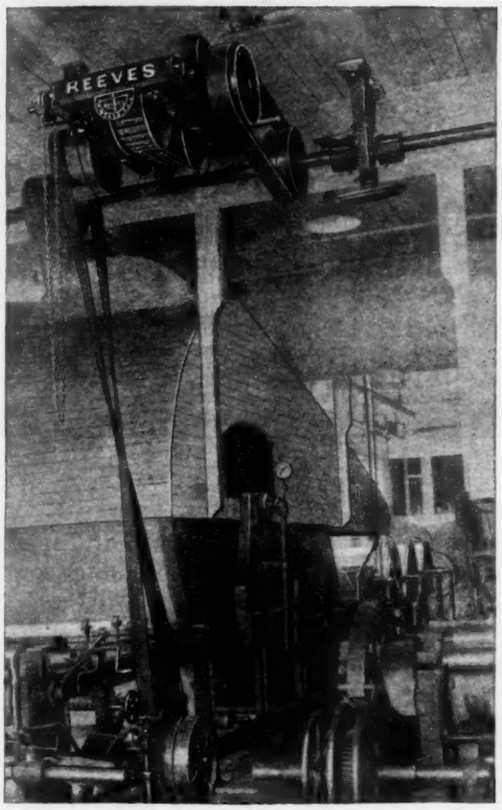


Ceiling type installation of REEVES Variable Speed Transmission, driving a slasher in a large Georgia mill. Note how easily speeds may be changed—merely by a slight movement of chain extension from the speed changing screw of the Transmission.

How to Insure UNIFORM DRYING

of Warp Yarn in the Slasher

● BY replacing obsolete step-cone pulleys with the REEVES Variable Speed Transmission, you can put *infinite, accurate control of drying speeds* at the finger tips of your slasher operator—and secure *absolute uniformity* in the drying of warp yarns.

The REEVES enables you to select *exactly the proper rate of yarn travel* over the cylinders to match every changing requirement. The REEVES *eliminates* belt slippage—and the need for costly pulley changes which waste time and interrupt production. The REEVES permits you always to deliver a *pliable, elastic* warp to the looms—thus reducing end-breakage, increasing production, improving quality, cutting costs. Installed on your slasher, the REEVES *pays for itself* in a surprisingly short time!

The slasher is only one of the *many* textile machines which can be vastly improved in performance by the application of *accurate* speed regulation, as provided by the REEVES Transmission. Made in a wide range of sizes, designs and controls, there is a *correct* REEVES unit for *every* speed-control need in your plant. Send coupon for Catalog describing and illustrating these money-saving, process-improving uses; or write for facts on your *specific* requirements.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

Without obligation, please send copy of Catalog, T-99.

11-33

Name.....

Company.....

Address.....

Equipment To Balance Your Production

With the standard shorter week and higher wages, smooth, economical production is more necessary than ever before. It can only be secured through proper balance of machinery in each department.

Our long experience and intimate knowledge of textile machinery, values and markets, enable us to assist you in filling your requirements with dependable used machinery at attractive prices.

Write or telephone.

JONES MACHINERY COMPANY INCORPORATED

We are always in the market for dependable used textile machinery. Send us a list of what you have to offer.

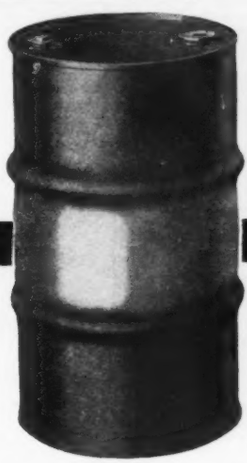
K. L. JONES, President

ATLANTA, GA.

C. & S. BANK BLDG.—Walnut 9196

PROVIDENCE, R. I.

INDUSTRIAL TRUST BLDG. Plantation 3642



Clean Boilers Save Coal!

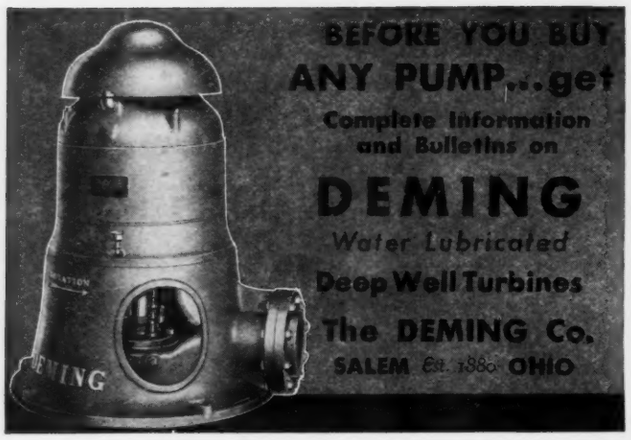
THE question of keeping scale out of your boilers is vital to lowering boiler room expense and saving coal. Furthermore, it is no longer necessary to shut down boilers to clean them.

The modern way, the economical, easy way, as well as the most thorough way, is with BROOKS IMPROVED BOILER METAL TREATMENT. It not only eliminates scale but prevents further formation, as well as protects the boiler against pitting and corrosion. It will not impart any odor or impurity to the steam to interfere with processes using steam. Over 10,000 engineers use and endorse BROOKS.

Write for our trial offer.
THE BROOKS OIL CO.,
CLEVELAND, OHIO

BROOKS IMPROVED BOILER METAL TREATMENT

GUARANTEED BY BROOKS OIL CO.



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NON-METALLIC
20 years without a drink—
"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial
ARGUTO OILLESS BEARING CO.
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Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

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SPINNING SPINDLE WHORLS RE-CUT
SPINNING STANDS REAMED
DRAWING ROLLS RE-COLLARED

FOR SALE
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96 Spindle, Flier, 6" gauge, 6" Traverse, piped with moistening apparatus and monel tank with pump, cotton band drive, Type M, Serial No. 13258, bought Sept. 1929, used only experimentally. Equipped with (2) 5 H.P., G.E., 440 V., 3 phase, 1200 R.P.M. motors and C. H. starters. No creel. Also 5000 wood spools 4¼" heads by 6" between heads.

Bemis Bro. Bag Co.
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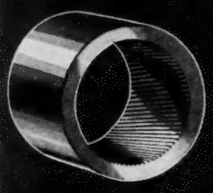
Then why not try an advertisement in this section of COTTON with its 9,800 copies per month, COTTON has the largest net paid circulation of any journal in the textile field. It reaches the active executives and managers, superintendents, heads of departments and master mechanics, the men directly in charge of the mill and its various departments and the men who buy or dictate the buying of machinery, equipment and supplies.

Advertising in this section produces results at small cost. Note the rates above and tell us what you wish to advertise.

COTTON
GRANT BLDG. ATLANTA, GA.



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On any Bearing problem you can benefit from the 25 years experience of Johnson Bronze.

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Factory and General Offices New Castle, Pa. **Branch Offices and Warehouses** in Principal Cities

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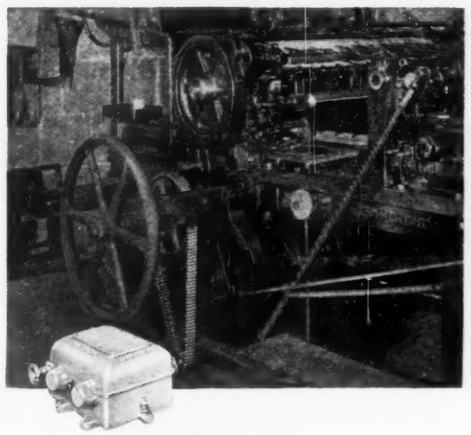
POSITIVE,
Infinitely Variable
Accurately Controlled
Power Transmission



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any SPEED *instantly*

EVERY textile machine that needs speed control, and so many of them do, to assure product quality, needs a P.I.V. Gear. Only in these unique units can you get Positive Driving—**no slippage;** Infinite Speed Variation—**to a fraction of a revolution;** and Accurate Speed Control—either by a single hand wheel on the gear case, by remote control with revolution indicator at control station, or by semi or fully-automatic control device.

To get the most out of every textile machine, where material, quality or weight is subject to change, where the skill and experience of operators vary, where the correct change in R.P.M. means improvement of finished quality, install a P.I.V. Gear.

Write for Book No. 1274, which completely illustrates and describes the **"any speed instantly"** P.I.V. Gear.

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Leading Manufacturers of
Positive Power Transmitting Equipment

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Advertisers' Index

A

Aberfoyle Mfg. Co. 90
Abbott Machine Co. 114
Akron Belting Co. 83
Aldrich Machine Works 4
Alemite Corp. ..... *
Allis-Chalmers Mfg. Co. 13
American Enka Corp. 76
Anderson, Clayton & Co. 81
Arguto Oilless Bearing Co. ...120
Arkansas Co., Inc. 18
Armstrong Cork & Insulation Co. 47
Arnold Hoffman & Co., Inc... *
Atlanta Envelope Co. ..... *
Atlanta Harness & Reed Mfg. Co. 84
Atwood Machine Co. ..... *

B

Babbitt Bros. 117
Barber-Colman Co. ..... *
Belger Co. ..... *
Boger & Crawford 94
Bond Co., Charles 79
Borne Scrymser Co. 113
Bosson & Lane, Inc. 110
Brinton Co., H. 105
Brooks Oil Co. 119
Buffalo Electro-Chemical Co., Inc. 112
Butterworth & Sons Co., H. W. 3

C

Cameron Machine Co. 114
Campbell & Co., John 113
Centrif-Air Machine Co., Inc... *
Ciba Co. 111
Clinton Co. 66
Comer-Kimmel Machinery Co.. 66
Corn Products Refining Co....115
Cyclone Fence Co. 78

D

Deming Co. 120
Denman Tire & Rubber Co. .. *
Detergent Products Corp. .... *
Dixie Mercerizing Co. ..... *
Drake Corp. 64
Draper Corporation 1
Dronsfield Bros., Ltd. 82
Dupont de Nemours & Co., E. I. 60

F

Fafnir Bearing Co. ..... *
Finnell System, Inc. 78
Foster Machine Co. ..... *
Franklin Process Co. 17

G

Gallun & Sons Corp., A. F. ..116
Gastonia Textile Sheet Metal Wks. 84
General Dyestuff Corp. 72
General Electric Co. ..... *
General Electric Co. Nela Park 8
General Electric Vapor Lamp Co. 53
Goodrich Rubber Co., B. F.... *
Goodyear Tire & Rubber Co... 45
Grasselli Chemical Co. ..... *

H

H. & B. American Machine Co. 51
Hemphill Co. ..... *
Henderson Fdry. & Mach. Works 6
Hercules Powder Co., Inc. ... *
Hermas Machine Co. 111
Hinde & Dauch Paper Co. 57
Hotel Atlanta Biltmore 117
Hotel Pennsylvania 117
Hotel William Penn 112
Hotel Vanderbilt 14
Howard Bros. Mfg. Co. 2
Hurley-Johnson Corp. 114
Hyatt Roller Bearing Co. 9
Hygrolit, Incorporated 69

I

Ideal Machine Co. 120
Industrial Rayon Corp. 22
International Nickel Co. 15

J

Jacobs Graphic Arts Co. 10
Johnson, Chas. B. 82
Johnson Bronze Co. 121
Jones Machinery Co., Inc. ...119

K

Kali Mfg. Co. 112
Keever Starch Co. 110

L

Langevin, George F. 66
Laucks, Inc., I. F. 88
Laurel Soap Mfg. Co. 109
Lawrence Leather Co., A. C. . 59
Link Belt Co. 121
Logemann Bros. Co. 85
Loper Co., Ralph E. 114

M

Manhattan Rubber Mfg. Co. Division ....Inside Back Cover
McCord, H. M. 66
Merrow Machine Co. 85
Moccasin Bushing Co. 84
Morehead Mfg. Co. ..... *

N

National Oil Products Co. ... *
Neumann & Co., R. 114
New York & New Jersey Lubricant Co. 83

O

Old Dominion Box Co. 109
Onyx Oil & Chemical Co. 113

P

Parks & Woolson Mch. Co. ... 7
Pearson & Sons Co., Jos. T. ..109
Permutit Co. 16
Phila. Felt Co. 84
Phila. Quartz Co. 113
Proctor & Schwartz, Inc. 80
Propellair, Inc. ..... *

Q

Quissett Mills 107

R

R. & H. Chemical Dept. of E. I. duPont de Nemours & Co. *
Reeves Pulley Co. 119
Rohm & Haas Co., Inc. ..... *
Roy & Sons Co., B. S. 116
Royce Chemical Co. 20
Royersford Needle Works, Inc. 109

S

Saco-Lowell Shops 49
Sargent's Sons Corp., C. G.... 19
Scholler Bros., Inc. 107
Scott & Williams, Inc. 87
Seydel Wooley Co. ..... *
Sherwin-Williams Co. ..... *
Showalter Printing Co., A. J. .116
S. K. F. Industries, Inc..... .....Inside Front Cover
Sipp-Eastwood Corp. 117
Socony-Vacuum Corp. 12
Solvay Sales Corp. 112
Sonoco Products Co. ..Back Cover
Standard Brands, Inc. ..... *
Standard-Coosa-Thatcher Co. . .....Front Cover
Steel Heddle Mfg. Co. 77
Stein, Hall & Co., Inc. ..... *
Stewart Iron Works Co., Inc...116
Swecker, J. Preston 120

T

Terrell Machine Co. 114
Textile Machine Works 109
Three-In-One Oil Co. 75
Torrington Co. .....97 and 98

U

Union Special Machine Co. ... *
Universal Winding Co. 70
U. S. Ring Traveler Co. 82

V

Veeder-Root, Inc. 62

W

Wak, Inc. 66
Want Ads 120
Waterman, Currier & Co. 107
Weimar Bros. 120
Westinghouse Electric & Mfg. Co. 11
Whitin Machine Works 5
Whitinsville Spinning Ring Co. 115
Wildman Mfg. Co. 92
Williams & Sons, I. B. ..... *
Willcox & Gibbs Sewing Machine Co. 55
Wolf & Co., Jacques ..... *

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PAT. APPLIED FOR

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the low tension rubber belt—has 100% overload capacity above rated h. p.

The advanced design of Condor Compensated belt provides a general purpose belt that can be used with absolute confidence on every type of drive with or without idlers in a textile mill.

Operating at low tension as it does, special attention or take-ups will not be necessary. The resulting minimum wear on machine bearing, shafting, and belt eliminate many items of maintenance that ordinarily cut into your profits.

Patents have been applied for on the special Compensated design.

Your inquiries relating to difficult belting installations are welcome. Try Condor Compensated Belt.

HAS ELEVEN ADVANTAGES—

1. freedom from rupture in outside ply
2. freedom from ply separation
3. three to four times longer fastener life
4. higher efficiency regardless of atmospheric conditions
5. freedom from bearing, shafting, and hanger troubles
6. higher efficiency when run at low tension
7. double the overload capacity at rated horsepower
8. freedom from wear on pulley side
9. higher efficiency on small pulleys
10. only rubber belt that responds to dressing
11. material reduction in belting "costs"

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LONG LIFE EFFICIENCY LOWERS COSTS

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The re-enforcing Gummed Cloth inner lining—an exclusive SONOCO feature—gives greater tensile strength, as well as eliminates handling any glue in roll covering.

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APART from ease and efficiency of application, SONOCO Cork Cot Savings really start with an all important Low First Cost. And this initial saving is multiplied several times by rebuffing the worn surfaces of SONOCO Cots, thereby increasing their original long life efficiency threefold and more.

Is it any wonder then that so many mills after exhaustive test runs, have consistently adopted SONOCO Cork Cots?

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